

Ihsan Barin

Thermochemical Data of Pure Substances

Part II

H **C_p** **S**

G

ΔH_f **ΔG_f** **$\log K_f$**

$-(G - H_{298}) / T$



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Ihsan Barin

**Thermochemical Data
of Pure Substances**



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Thermochemical Data of Pure Substances

in collaboration with

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Part II



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14 Tables of thermochemical data of pure substances (Continued)

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]				[————— kJ / mol —————]				[-]
GAS	298.15	63.131	258.681	258.681	-942.781	0.000	-1019.907	-942.781	-942.103	165.053
	300.00	63.304	259.072	258.682	-942.664	0.117	-1020.386	-942.813	-942.099	164.034
	400.00	70.368	278.350	261.262	-935.946	6.835	-1047.286	-944.537	-941.602	122.961
	500.00	74.377	294.522	266.342	-928.691	14.090	-1075.952	-952.516	-940.035	98.205
	600.00	76.802	308.314	272.217	-921.123	21.658	-1106.111	-954.376	-937.359	81.604
	700.00	78.365	320.279	278.247	-913.359	29.422	-1137.554	-956.015	-934.391	69.725
	800.00	79.426	330.817	284.173	-905.466	37.315	-1170.119	-957.533	-931.198	60.801
	900.00	80.176	340.217	289.887	-897.484	45.297	-1203.680	-958.982	-927.818	53.849
	1000.00	80.725	348.695	295.351	-889.438	53.343	-1238.132	-960.390	-924.280	48.279
	1100.00	81.138	356.409	300.556	-881.344	61.437	-1273.393	-961.773	-920.602	43.716
	1200.00	81.456	363.483	305.510	-873.213	69.568	-1309.393	-963.139	-916.798	39.907
	1300.00	81.705	370.013	310.224	-865.055	77.726	-1346.072	-964.476	-912.882	36.680
	1400.00	81.904	376.076	314.713	-856.874	85.907	-1383.380	-965.790	-908.864	33.910
	1500.00	82.065	381.732	318.995	-848.675	94.106	-1421.273	-967.083	-904.753	31.506
	1600.00	82.196	387.033	323.083	-840.462	102.319	-1459.714	-968.359	-900.556	29.400
	1700.00	82.304	392.019	326.993	-832.237	110.544	-1498.669	-1260.028	-882.038	27.102
	1800.00	82.395	396.726	330.738	-824.002	118.779	-1538.109	-1259.770	-859.811	24.951
	1900.00	82.470	401.183	334.329	-815.758	127.023	-1578.006	-1259.516	-837.598	23.027
	2000.00	82.535	405.415	337.778	-807.508	135.273	-1618.338	-1259.267	-815.398	21.296
	2100.00	82.589	409.443	341.096	-799.252	143.529	-1659.082	-1259.022	-793.211	19.730
	2200.00	82.635	413.286	344.291	-790.990	151.791	-1700.220	-1258.784	-771.035	18.307
	2300.00	82.675	416.961	347.371	-782.725	160.056	-1741.734	-1258.552	-748.870	17.007
	2400.00	82.710	420.480	350.344	-774.455	168.326	-1783.607	-1258.326	-726.714	15.817
	2500.00	82.739	423.857	353.218	-766.183	176.598	-1825.825	-1258.108	-704.568	14.721

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Li3F3[g]

TRILITHIUM TRIFLUORIDE (GAS)

77.818

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	102.501	318.093	318.093	-1517.202	0.000	-1612.042	-1517.202	-1495.336	261.977
	300.00	102.756	318.728	318.095	-1517.012	0.190	-1612.631	-1517.236	-1495.200	260.337
	400.00	113.294	349.872	322.270	-1506.161	11.041	-1646.110	-1519.048	-1487.584	194.259
	500.00	119.398	375.868	330.464	-1494.500	22.702	-1682.434	-1530.237	-1478.558	154.464
	600.00	123.126	397.992	339.921	-1482.360	34.842	-1721.155	-1532.239	-1468.027	127.803
	700.00	125.541	417.166	349.618	-1469.918	47.284	-1761.934	-1533.902	-1457.190	108.737
	800.00	127.186	434.044	359.137	-1457.277	59.925	-1804.512	-1535.377	-1446.129	94.423
	900.00	128.354	449.095	368.311	-1444.497	72.705	-1848.682	-1536.744	-1434.890	83.279
	1000.00	129.210	462.665	377.079	-1431.616	85.586	-1894.281	-1538.045	-1423.503	74.356
	1100.00	129.855	475.012	385.430	-1418.662	98.540	-1941.175	-1539.306	-1411.987	67.050
	1200.00	130.353	486.333	393.373	-1405.650	111.552	-1989.250	-1540.539	-1400.358	60.956
	1300.00	130.744	496.783	400.931	-1392.595	124.607	-2038.412	-1541.727	-1388.628	55.796
	1400.00	131.056	506.484	408.128	-1379.504	137.698	-2088.581	-1542.878	-1376.808	51.369
	1500.00	131.309	515.535	414.990	-1366.385	150.817	-2139.687	-1543.998	-1364.907	47.530
	1600.00	131.516	524.016	421.542	-1353.244	163.958	-2191.669	-1545.089	-1352.931	44.169
	1700.00	131.688	531.994	427.807	-1340.083	177.119	-2244.474	-1981.771	-1319.527	40.544
	1800.00	131.831	539.525	433.806	-1326.907	190.295	-2298.053	-1980.560	-1280.606	37.162
	1900.00	131.952	546.657	439.560	-1313.718	203.484	-2352.365	-1979.355	-1241.753	34.138
	2000.00	132.054	553.427	445.085	-1300.518	216.684	-2407.373	-1978.156	-1202.963	31.418
	2100.00	132.141	559.873	450.399	-1287.308	229.894	-2463.040	-1976.964	-1164.233	28.959
	2200.00	132.216	566.022	455.516	-1274.090	243.112	-2519.337	-1975.780	-1125.559	26.724
	2300.00	132.280	571.900	460.449	-1260.865	256.337	-2576.235	-1974.606	-1086.939	24.685
	2400.00	132.336	577.531	465.211	-1247.634	269.568	-2633.709	-1973.441	-1048.370	22.817
	2500.00	132.384	582.934	469.813	-1234.398	282.804	-2691.734	-1972.285	-1009.849	21.100

References

Phase	H / S	C _p
GAS	Ja1	Ja1

41.939

LITHIUM HYPOFLUORITE (GAS)

LiFO[g]

Phase	T [K]	C _p [————— J / (K mol)]	S [(K mol)]	–(G–H298)/T [—————]	H [————— kJ / mol]	H–H298	G [————— kJ / mol]	ΔH _f	ΔG _f	log K _f [–]
GAS	298.15	42.828	246.024	246.024	–92.048	0.000	–165.400	–92.048	–95.916	16.804
	300.00	42.963	246.289	246.025	–91.969	0.079	–165.855	–92.070	–95.940	16.705
	400.00	47.925	259.418	247.781	–87.393	4.655	–191.160	–93.202	–97.057	12.674
	500.00	50.545	270.419	251.240	–82.459	9.589	–217.668	–97.413	–97.578	10.194
	600.00	52.211	279.791	255.237	–77.315	14.733	–245.190	–98.564	–97.501	8.488
	700.00	53.401	287.933	259.339	–72.032	20.016	–273.585	–99.609	–97.240	7.256
	800.00	54.313	295.126	263.371	–66.644	25.404	–302.745	–100.596	–96.834	6.323
	900.00	55.041	301.567	267.264	–61.175	30.873	–332.585	–101.545	–96.306	5.589
	1000.00	55.636	307.398	270.990	–55.641	36.407	–363.038	–102.468	–95.674	4.998
	1100.00	56.126	312.724	274.546	–50.052	41.996	–394.048	–103.373	–94.951	4.509
	1200.00	56.529	317.625	277.934	–44.418	47.630	–425.569	–104.262	–94.146	4.098
	1300.00	56.854	322.163	281.164	–38.749	53.299	–457.561	–105.131	–93.268	3.748
	1400.00	57.110	326.387	284.245	–33.050	58.998	–489.991	–105.987	–92.323	3.445
	1500.00	57.300	330.334	287.187	–27.329	64.719	–522.829	–106.832	–91.318	3.180
	1600.00	57.429	334.036	290.001	–21.592	70.456	–556.050	–107.673	–90.256	2.947
	1700.00	57.498	337.520	292.695	–15.845	76.203	–589.629	–253.720	–82.021	2.520
	1800.00	57.510	340.807	295.277	–10.094	81.954	–623.547	–253.815	–71.918	2.087
	1900.00	57.465	343.916	297.756	–4.345	87.703	–657.785	–253.930	–61.810	1.699
	2000.00	57.365	346.861	300.138	1.397	93.445	–692.325	–254.070	–51.695	1.350

References

Phase	H / S	C _p
GAS	Ja1	Ja1

LiH

LITHIUM HYDRIDE

7.949

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f kJ / mol	ΔG _f kJ / mol	log K _f [–]
SOL	298.15	27.951	20.037	20.037	–90.625	0.000	–96.599	–90.625	–68.448	11.992
	300.00	28.089	20.211	20.038	–90.573	0.052	–96.636	–90.645	–68.310	11.894
	400.00	34.795	29.239	21.223	–87.419	3.206	–99.114	–91.558	–60.717	7.929
	500.00	40.737	37.650	23.677	–83.638	6.987	–102.463	–95.174	–52.625	5.498
	600.00	46.378	45.579	26.672	–79.281	11.344	–106.628	–95.259	–44.096	3.839
	700.00	51.876	53.142	29.917	–74.368	16.257	–111.567	–94.741	–35.602	2.657
	800.00	57.299	60.424	33.278	–68.908	21.717	–117.247	–93.661	–27.221	1.777
	900.00	62.678	67.484	36.688	–62.909	27.716	–123.644	–92.041	–19.007	1.103
	961.95	65.996	71.765	38.810	–58.924	31.701	–127.958	–90.772	–14.022	0.761
LIQ			23.488		22.594					
	961.95	58.576	95.253	38.810	–36.330	54.295	–127.958	–68.178	–14.022	0.761
	1000.00	58.576	97.525	41.001	–34.101	56.524	–131.626	–67.621	–11.891	0.621
	1100.00	58.576	103.108	46.397	–28.243	62.382	–141.662	–66.168	–6.388	0.303
	1200.00	58.576	108.205	51.339	–22.385	68.240	–152.231	–64.734	–1.017	0.044

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 MPT= 961.8
LIQ	Ja1	Ja1	Ja1 NDPT= 1223. (2 LiH = 2 Li + H2)

7.949

LITHIUM HYDRIDE (GAS)

LiH[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [(K mol) —————]	–(G–H298)/T [—————]	H [—————]	H–H298 [—————]	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _r [–]
GAS	298.15	29.737	170.904	170.904	140.624	0.000	89.669	140.624	117.820	–20.642
	300.00	29.743	171.088	170.905	140.679	0.055	89.352	140.607	117.679	–20.490
	400.00	30.785	179.767	172.081	143.698	3.074	71.791	139.559	110.188	–14.389
	500.00	32.060	186.776	174.341	146.842	6.218	53.454	135.306	103.293	–10.791
	600.00	33.160	192.721	176.921	150.104	9.480	34.472	134.126	97.004	–8.445
	700.00	34.071	197.903	179.556	153.467	12.843	14.935	133.094	90.900	–6.783
	800.00	34.826	202.504	182.142	156.913	16.289	–5.090	132.161	84.937	–5.546
	900.00	35.454	206.643	184.638	160.428	19.804	–25.551	131.297	79.086	–4.590
	1000.00	35.979	210.407	187.030	164.001	23.377	–46.406	130.480	73.329	–3.830
	1100.00	36.419	213.857	189.314	167.621	26.997	–67.622	129.696	67.652	–3.213
	1200.00	36.790	217.042	191.494	171.282	30.658	–89.168	128.934	62.046	–2.701
	1300.00	37.104	220.000	193.574	174.977	34.353	–111.022	128.194	56.502	–2.270
	1400.00	37.373	222.760	195.561	178.701	38.077	–133.162	127.470	51.014	–1.903
	1500.00	37.605	225.346	197.462	182.451	41.827	–155.568	126.758	45.578	–1.587
	1600.00	37.811	227.780	199.281	186.222	45.598	–178.226	126.054	40.189	–1.312
	1700.00	37.998	230.078	201.026	190.012	49.388	–201.120	–19.849	41.964	–1.289
	1800.00	38.176	232.255	202.701	193.821	53.197	–224.237	–19.789	45.599	–1.323
	1900.00	38.353	234.323	204.311	197.647	57.023	–247.567	–19.732	49.230	–1.353
	2000.00	38.536	236.295	205.861	201.492	60.868	–271.099	–19.677	52.858	–1.381

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Lil

LITHIUM IODIDE

133.845

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f kJ / mol	ΔG _f kJ / mol	log K _f [-]
SOL	298.15	50.278	85.772	85.772	-270.077	0.000	-295.650	-270.077	-269.666	47.244
	300.00	50.330	86.083	85.773	-269.984	0.093	-295.809	-270.080	-269.663	46.953
	400.00	53.139	100.947	87.781	-264.810	5.267	-305.189	-278.340	-269.213	35.156
	500.00	55.948	113.106	91.665	-259.356	10.721	-315.909	-302.918	-264.552	27.638
	600.00	58.758	123.555	96.128	-253.621	16.456	-327.754	-302.036	-256.956	22.370
	700.00	61.567	132.824	100.720	-247.605	22.472	-340.581	-300.827	-249.534	18.620
	742.00	62.747	136.445	102.641	-244.994	25.083	-346.236	-300.229	-246.474	17.351
LIQ			19.736		14.644					
	742.00	63.178	156.181	102.641	-230.350	39.727	-346.236	-285.585	-246.474	17.351
	800.00	63.178	160.936	106.697	-226.686	43.391	-355.435	-284.697	-243.450	15.896
	900.00	63.178	168.377	113.145	-220.368	49.709	-371.908	-283.161	-238.387	13.836
	1000.00	63.178	175.034	119.007	-214.050	56.027	-389.084	-281.624	-233.494	12.196
	1100.00	63.178	181.056	124.378	-207.732	62.345	-406.893	-280.089	-228.755	10.863
	1200.00	63.178	186.553	129.334	-201.414	68.663	-425.278	-278.555	-224.156	9.757
	1300.00	63.178	191.610	133.932	-195.096	74.981	-444.189	-277.016	-219.686	8.827
	1400.00	63.178	196.292	138.221	-188.779	81.298	-463.587	-275.471	-215.333	8.034
	1500.00	63.178	200.651	142.240	-182.461	87.616	-483.437	-273.921	-211.092	7.351

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja2 NBPT= 1449. GAS (LiJ + Li2J2) / 1497. GAS (Li)

133.845

LITHIUM IODIDE (GAS)

LiI[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f –	ΔG _f –	log K _f [–]
GAS	298.15	34.571	232.229	232.229	–91.002	0.000	–160.241	–91.002	–134.257	23.521
	300.00	34.601	232.443	232.230	–90.938	0.064	–160.671	–91.034	–134.525	23.423
	400.00	35.801	242.579	233.604	–87.412	3.590	–184.444	–100.941	–148.467	19.388
	500.00	36.484	250.648	236.233	–83.795	7.207	–209.119	–127.356	–157.761	16.481
	600.00	36.918	257.341	239.209	–80.123	10.879	–234.528	–128.538	–163.729	14.254
	700.00	37.220	263.055	242.218	–76.416	14.586	–260.554	–129.638	–169.507	12.649
	800.00	37.446	268.041	245.141	–72.682	18.320	–287.114	–130.693	–175.130	11.435
	900.00	37.626	272.462	247.935	–68.928	22.074	–314.144	–131.721	–180.623	10.483
	1000.00	37.776	276.434	250.590	–65.158	25.844	–341.592	–132.732	–186.002	9.716
	1100.00	37.906	280.041	253.106	–61.373	29.629	–369.418	–133.730	–191.281	9.083
	1200.00	38.023	283.344	255.490	–57.577	33.425	–397.590	–134.718	–196.469	8.552
	1300.00	38.129	286.392	257.751	–53.769	37.233	–426.079	–135.689	–201.575	8.099
	1400.00	38.228	289.221	259.899	–49.951	41.051	–454.861	–136.644	–206.608	7.709
	1500.00	38.321	291.862	261.943	–46.124	44.878	–483.917	–137.584	–211.572	7.368
	1600.00	38.411	294.338	263.891	–42.287	48.715	–513.228	–138.510	–216.474	7.067
	1700.00	38.496	296.669	265.751	–38.442	52.560	–542.780	–284.627	–214.199	6.582
	1800.00	38.580	298.872	267.531	–34.588	56.414	–572.558	–284.774	–210.051	6.096
	1900.00	38.661	300.960	269.236	–30.726	60.276	–602.550	–284.917	–205.896	5.660
	2000.00	38.740	302.945	270.872	–26.856	64.146	–632.746	–285.056	–201.734	5.269

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Li2I2[g]

DILITHIUM DIIODIDE (GAS)

267.691

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
GAS	298.15	75.984	330.645	330.645	-361.916	0.000	-460.498	-361.916	-408.530	71.573
	300.00	76.070	331.116	330.647	-361.775	0.141	-461.110	-361.967	-408.819	71.182
	400.00	79.082	353.474	333.675	-353.996	7.920	-495.386	-381.056	-423.433	55.295
	500.00	80.483	371.288	339.477	-346.010	15.906	-531.655	-433.133	-428.940	44.811
	600.00	81.251	386.036	346.043	-337.920	23.996	-569.542	-434.750	-427.946	37.256
	700.00	81.719	398.599	352.676	-329.770	32.146	-608.789	-436.215	-426.694	31.840
	800.00	82.028	409.532	359.115	-321.582	40.334	-649.208	-437.604	-425.239	27.765
	900.00	82.244	419.207	365.264	-313.368	48.548	-690.654	-438.953	-423.612	24.586
	1000.00	82.402	427.881	371.100	-305.135	56.781	-733.016	-440.283	-421.836	22.034
	1100.00	82.523	435.740	376.624	-296.888	65.028	-776.203	-441.601	-419.927	19.941
	1200.00	82.618	442.925	381.854	-288.631	73.285	-820.141	-442.913	-417.899	18.191
	1300.00	82.695	449.541	386.810	-280.365	81.551	-864.769	-444.204	-415.762	16.706
	1400.00	82.760	455.672	391.512	-272.093	89.823	-910.033	-445.477	-413.526	15.429
	1500.00	82.814	461.384	395.982	-263.814	98.102	-955.889	-446.734	-411.200	14.319
	1600.00	82.861	466.730	400.239	-255.530	106.386	-1002.298	-447.975	-408.791	13.346
	1700.00	82.902	471.755	404.299	-247.242	114.674	-1049.225	-739.612	-392.063	12.047
	1800.00	82.939	476.494	408.180	-238.950	122.966	-1096.639	-739.322	-371.627	10.784
	1900.00	82.972	480.979	411.894	-230.654	131.262	-1144.515	-739.037	-351.207	9.655
	2000.00	83.003	485.236	415.456	-222.355	139.561	-1192.828	-738.756	-330.803	8.640

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Li3N

TRILITHIUM NITRIDE

34.830

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
SOL	298.15	75.275	62.593	62.593	-164.557	0.000	-183.219	-164.557	-128.644	22.538
	300.00	75.534	63.059	62.594	-164.418	0.139	-183.335	-164.581	-128.421	22.360
	400.00	87.086	86.452	65.706	-156.258	8.299	-190.839	-165.724	-116.189	15.173
	500.00	96.968	106.959	71.945	-147.050	17.507	-200.530	-175.790	-102.764	10.736
	600.00	106.414	125.478	79.347	-136.878	27.679	-212.165	-176.043	-88.116	7.671
	700.00	115.560	142.572	87.173	-125.777	38.780	-225.578	-175.243	-73.511	5.485
	800.00	124.386	158.583	95.108	-113.777	50.780	-240.644	-173.505	-59.086	3.858
	900.00	132.856	173.726	103.010	-100.912	63.645	-257.266	-170.903	-44.931	2.608
	1000.00	140.940	188.146	110.808	-87.219	77.338	-275.365	-167.491	-31.110	1.625
	1086.00	147.569	200.046	117.406	-74.811	89.746	-292.060	-163.944	-19.526	0.939

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 MPT= 1086.

Phase	T [K]	C _p [$\frac{\text{J}}{\text{K mol}}$]	S J / (K mol)	$\frac{-(G-H_{298})}{T}$ [$\frac{\text{J}}{\text{K mol}}$]	H [$\frac{\text{kJ}}{\text{mol}}$]	H-H ₂₉₈ kJ / mol	G kJ / mol	ΔH_f kJ / mol	ΔG_f kJ / mol	log K _f [-]
GAS	298.15	32.184	210.962	210.962	84.098	0.000	21.200	84.098	60.452	-10.591
	300.00	32.245	211.161	210.963	84.158	0.060	20.809	84.085	60.305	-10.500
	400.00	34.421	220.779	212.259	87.506	3.408	-0.806	83.333	52.489	-6.854
	500.00	35.472	228.585	214.769	91.006	6.908	-23.286	79.369	45.190	-4.721
	600.00	36.080	235.110	217.630	94.586	10.488	-46.480	78.391	38.447	-3.347
	700.00	36.479	240.704	220.536	98.215	14.117	-70.278	77.467	31.864	-2.378
	800.00	36.766	245.594	223.369	101.878	17.780	-94.598	76.559	25.411	-1.659
	900.00	36.988	249.938	226.085	105.566	21.468	-119.378	75.652	19.072	-1.107
	1000.00	37.171	253.845	228.669	109.274	25.176	-144.571	74.743	12.834	-0.670
	1100.00	37.327	257.395	231.121	112.999	28.901	-170.135	73.828	6.687	-0.318
	1200.00	37.465	260.649	233.448	116.739	32.641	-196.040	72.909	0.624	-0.027
	1300.00	37.590	263.653	235.658	120.492	36.394	-222.257	71.996	-5.362	0.215
	1400.00	37.706	266.443	237.758	124.257	40.159	-248.763	71.088	-11.279	0.421
	1500.00	37.816	269.048	239.758	128.033	43.935	-275.539	70.186	-17.131	0.597
	1600.00	37.920	271.492	241.666	131.820	47.722	-302.567	69.290	-22.923	0.748
	1700.00	38.021	273.794	243.489	135.617	51.519	-329.833	-76.806	-21.538	0.662
	1800.00	38.118	275.970	245.233	139.424	55.326	-357.322	-76.939	-18.283	0.531
	1900.00	38.213	278.033	246.906	143.240	59.142	-385.023	-77.075	-15.021	0.413
	2000.00	38.306	279.996	248.512	147.066	62.968	-412.925	-77.215	-11.751	0.307
	2100.00	38.397	281.867	250.056	150.901	66.803	-441.019	-77.357	-8.475	0.211
	2200.00	38.487	283.655	251.543	154.746	70.648	-469.296	-77.503	-5.191	0.123
	2300.00	38.575	285.368	252.976	158.599	74.501	-497.748	-77.653	-1.901	0.043
	2400.00	38.663	287.012	254.361	162.461	78.363	-526.367	-77.805	1.396	-0.030
	2500.00	38.750	288.592	255.698	166.331	82.233	-555.148	-77.961	4.699	-0.098
	2600.00	38.837	290.113	256.993	170.211	86.113	-584.084	-78.120	8.009	-0.161
	2700.00	38.922	291.581	258.247	174.099	90.001	-613.169	-78.282	11.324	-0.219
	2800.00	39.008	292.998	259.463	177.995	93.897	-642.398	-78.447	14.646	-0.273
	2900.00	39.093	294.368	260.643	181.900	97.802	-671.767	-78.614	17.974	-0.324
	3000.00	39.177	295.695	261.789	185.814	101.716	-701.270	-78.783	21.307	-0.371

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Li2O

LITHIUM OXIDE

29.881

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	54.086	37.890	37.890	-598.730	0.000	-610.027	-598.730	-562.104	98.478
	300.00	54.362	38.226	37.891	-598.630	0.100	-610.097	-598.748	-561.877	97.831
	400.00	64.074	55.381	40.165	-592.644	6.086	-614.796	-599.476	-549.468	71.753
	500.00	69.534	70.302	44.735	-585.946	12.784	-621.098	-606.179	-536.276	56.024
	600.00	73.723	83.362	50.107	-578.777	19.953	-628.794	-606.544	-522.252	45.466
	700.00	77.347	95.004	55.704	-571.220	27.510	-637.723	-606.468	-508.204	37.923
	800.00	80.616	105.549	61.286	-563.320	35.410	-647.759	-606.041	-494.192	32.267
	900.00	83.601	115.219	66.748	-555.107	43.623	-658.804	-605.313	-480.252	27.873
	1000.00	86.329	124.171	72.048	-546.608	52.122	-670.778	-604.320	-466.407	24.363
	1100.00	88.807	132.517	77.170	-537.849	60.881	-683.617	-603.086	-452.673	21.496
	1200.00	91.040	140.341	82.112	-528.855	69.875	-697.264	-601.634	-439.062	19.112
	1300.00	93.029	147.709	86.877	-519.649	79.081	-711.671	-599.969	-425.580	17.100
	1400.00	94.771	154.668	91.473	-510.257	88.473	-726.793	-598.116	-412.234	15.381
	1500.00	96.266	161.259	95.908	-500.703	98.027	-742.592	-596.098	-399.027	13.895
	1600.00	97.514	167.513	100.189	-491.012	107.718	-759.033	-593.939	-385.958	12.600
	1700.00	98.512	173.456	104.326	-481.209	117.521	-776.084	-882.075	-358.787	11.024
	1800.00	99.260	179.109	108.325	-471.318	127.412	-793.715	-878.206	-328.117	9.522
	1843.00	99.505	181.456	110.004	-467.044	131.686	-801.467	-876.527	-314.996	8.928
LIQ			31.783		58.576					
	1843.00	100.416	213.239	110.004	-408.468	190.262	-801.467	-817.951	-314.996	8.928
	1900.00	100.416	216.297	113.147	-402.745	195.985	-813.709	-815.669	-299.476	8.233
	2000.00	100.416	221.448	118.434	-392.703	206.027	-835.599	-811.677	-272.411	7.115
	2100.00	100.416	226.347	123.457	-382.662	216.068	-857.990	-807.699	-245.545	6.108
	2200.00	100.416	231.018	128.241	-372.620	226.110	-880.861	-803.733	-218.869	5.197
	2300.00	100.416	235.482	132.807	-362.578	236.152	-904.187	-799.782	-192.373	4.369
	2400.00	100.416	239.756	137.175	-352.537	246.193	-927.951	-795.843	-166.048	3.614
	2500.00	100.416	243.855	141.361	-342.495	256.235	-952.133	-791.917	-139.888	2.923
	2600.00	100.416	247.793	145.379	-332.454	266.276	-976.716	-788.004	-113.884	2.288
	2700.00	100.416	251.583	149.243	-322.412	276.318	-1001.686	-784.103	-88.030	1.703
	2800.00	100.416	255.235	152.964	-312.370	286.360	-1027.028	-780.215	-62.321	1.163
	2900.00	100.416	258.759	156.551	-302.329	296.401	-1052.729	-776.338	-36.750	0.662

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja2 DEC., 1700.K, GAS (Li ₂ O ₂ ,Li _x O _y) / NBPT= 2836. GAS (Li ₂ O)

29.881

LITHIUM OXIDE (GAS)

Li2O[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
GAS	298.15	49.776	229.108	229.108	–166.942	0.000	–235.251	–166.942	–187.328	32.819
	300.00	49.834	229.416	229.109	–166.850	0.092	–235.675	–166.968	–187.454	32.639
	400.00	53.122	244.210	231.104	–161.700	5.242	–259.383	–168.532	–194.055	25.341
	500.00	55.607	256.348	234.975	–156.255	10.687	–284.429	–176.487	–199.607	20.853
	600.00	57.282	266.645	239.417	–150.605	16.337	–310.592	–178.372	–204.050	17.764
	700.00	58.426	275.566	243.958	–144.816	22.126	–337.713	–180.064	–208.194	15.536
	800.00	59.233	283.424	248.410	–138.931	28.011	–365.670	–181.652	–212.103	13.849
	900.00	59.819	290.436	252.697	–132.977	33.965	–394.369	–183.184	–215.817	12.526
	1000.00	60.257	296.762	256.792	–126.972	39.970	–423.734	–184.684	–219.363	11.458
	1100.00	60.592	302.522	260.692	–120.929	46.013	–453.703	–186.166	–222.759	10.578
	1200.00	60.855	307.805	264.401	–114.856	52.086	–484.223	–187.636	–226.020	9.838
	1300.00	61.063	312.685	267.929	–108.760	58.182	–515.250	–189.080	–229.160	9.208
	1400.00	61.232	317.217	271.290	–102.645	64.297	–546.748	–190.504	–232.190	8.663
	1500.00	61.371	321.446	274.494	–96.514	70.428	–578.684	–191.909	–235.118	8.188
	1600.00	61.486	325.411	277.554	–90.371	76.571	–611.029	–193.298	–237.954	7.768
	1700.00	61.583	329.141	280.480	–84.218	82.724	–643.758	–193.298	–237.954	7.768
	1800.00	61.665	332.664	283.282	–78.055	88.887	–676.850	–193.298	–237.954	7.768
	1900.00	61.735	336.000	285.970	–71.885	95.057	–710.284	–193.298	–237.954	7.768
	2000.00	61.795	339.168	288.551	–65.709	101.233	–744.044	–193.298	–237.954	7.768
	2100.00	61.848	342.184	291.034	–59.527	107.415	–778.113	–193.298	–237.954	7.768
	2200.00	61.894	345.062	293.425	–53.339	113.603	–812.476	–193.298	–237.954	7.768
	2300.00	61.934	347.814	295.730	–47.148	119.794	–847.121	–193.298	–237.954	7.768
	2400.00	61.970	350.451	297.956	–40.953	125.989	–882.035	–193.298	–237.954	7.768
	2500.00	62.001	352.981	300.106	–34.754	132.188	–917.208	–193.298	–237.954	7.768
	2600.00	62.030	355.414	302.187	–28.553	138.389	–952.628	–193.298	–237.954	7.768
	2700.00	62.055	357.755	304.202	–22.348	144.594	–988.288	–193.298	–237.954	7.768
	2800.00	62.078	360.013	306.155	–16.142	150.800	–1024.177	–193.298	–237.954	7.768
	2900.00	62.099	362.191	308.050	–9.933	157.009	–1060.287	–193.298	–237.954	7.768
	3000.00	62.118	364.297	309.890	–3.722	163.220	–1096.612	–193.298	–237.954	7.768

References

Phase	H / S	C _p
GAS	Ja1	Ja1

45.881

DILITHIUM PEROXIDE

Li2O2

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	70.671	56.484	56.484	–632.621	0.000	–649.462	–632.621	–570.957	100.029
	300.00	70.890	56.922	56.485	–632.490	0.131	–649.567	–632.636	–570.574	99.346
	400.00	82.676	78.930	59.407	–624.812	7.809	–656.384	–633.157	–549.794	71.796
	468.00	90.691	92.523	63.241	–618.917	13.704	–662.218	–639.259	–535.424	59.760

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 NDPT= 468.

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[— —]
GAS	298.15	72.623	273.563	273.563	-242.672	0.000	-324.235	-242.672	-245.730	43.051
	300.00	72.747	274.013	273.564	-242.538	0.134	-324.741	-242.683	-245.749	42.789
	400.00	77.109	295.627	276.482	-235.014	7.658	-353.265	-243.359	-246.675	32.212
	500.00	79.144	313.077	282.113	-227.190	15.482	-383.729	-250.464	-246.776	25.780
	600.00	80.264	327.615	288.519	-219.215	23.457	-415.784	-251.604	-245.928	21.410
	700.00	80.952	340.043	295.014	-211.151	31.521	-449.182	-252.648	-244.899	18.275
	800.00	81.410	350.885	301.334	-203.032	39.640	-483.740	-253.671	-243.722	15.913
	900.00	81.733	360.493	307.384	-194.874	47.798	-519.317	-254.701	-242.417	14.070
	1000.00	81.973	369.117	313.133	-186.688	55.984	-555.805	-255.751	-240.996	12.588
	1100.00	82.159	376.939	318.584	-178.481	64.191	-593.114	-256.824	-239.469	11.371
	1200.00	82.308	384.095	323.749	-170.257	72.415	-631.171	-257.917	-237.843	10.353
	1300.00	82.431	390.688	328.648	-162.020	80.652	-669.914	-259.012	-236.126	9.488
	1400.00	82.535	396.801	333.300	-153.772	88.900	-709.293	-260.109	-234.324	8.743
	1500.00	82.625	402.498	337.726	-145.514	97.158	-749.261	-261.207	-232.444	8.094
	1600.00	82.704	407.833	341.943	-137.247	105.425	-789.780	-262.307	-230.491	7.525
	1700.00	82.776	412.849	345.968	-128.973	113.699	-830.817	-553.818	-214.227	6.582
	1800.00	82.840	417.582	349.816	-120.692	121.980	-872.341	-553.417	-194.263	5.637
	1900.00	82.900	422.063	353.502	-112.405	130.267	-914.325	-553.036	-174.321	4.792
	2000.00	82.955	426.317	357.037	-104.112	138.560	-956.746	-552.674	-154.398	4.032

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [J / (K mol)]	S J / (K mol)	-(G-H298)/T [kJ / mol]	H [kJ / mol]	H-H298 [kJ / mol]	G [kJ / mol]	ΔH _f [kJ / mol]	ΔG _f [kJ / mol]	log K _f [-]
SOL	298.15	67.831	53.346	53.346	-1188.674	0.000	-1204.579	-1188.674	-1126.314	197.326
	300.00	68.199	53.767	53.347	-1188.548	0.126	-1204.678	-1188.693	-1125.927	196.041
	400.00	81.572	75.468	56.215	-1180.973	7.701	-1211.160	-1189.210	-1104.905	144.286
	500.00	88.415	94.476	62.012	-1172.442	16.232	-1219.680	-1192.314	-1083.508	113.193
	600.00	92.688	110.999	68.830	-1163.373	25.301	-1229.972	-1192.137	-1061.758	92.434
	700.00	95.747	125.527	75.913	-1153.944	34.730	-1241.813	-1191.757	-1040.057	77.610
	800.00	98.160	138.475	82.939	-1144.245	44.429	-1255.025	-1191.299	-1018.416	66.496
	900.00	100.196	150.157	89.769	-1134.325	54.349	-1269.466	-1190.864	-996.833	57.855
	1000.00	101.999	160.809	96.348	-1124.214	64.460	-1285.022	-1201.047	-974.535	50.905
	1100.00	103.649	170.609	102.660	-1113.930	74.744	-1301.600	-1200.332	-951.918	45.203
	1200.00	105.196	179.694	108.705	-1103.487	85.187	-1319.120	-1199.497	-929.370	40.454
	1300.00	106.669	188.173	114.496	-1092.893	95.781	-1337.518	-1198.536	-906.898	36.440
	1400.00	108.089	196.130	120.045	-1082.155	106.519	-1356.738	-1197.452	-884.504	33.001
	1500.00	109.470	203.635	125.370	-1071.277	117.397	-1376.729	-1196.247	-862.192	30.024
	1600.00	110.820	210.743	130.486	-1060.262	128.412	-1397.451	-1194.924	-839.964	27.422
	1700.00	112.148	217.502	135.407	-1049.114	139.560	-1418.866	-1338.688	-810.702	24.910
	1800.00	113.458	223.949	140.148	-1037.833	150.841	-1440.941	-1336.381	-779.710	22.627
	1883.00	114.534	229.088	143.956	-1028.371	160.303	-1459.744	-1334.385	-754.087	20.918
LIQ			46.662		87.864					
	1883.00	133.888	275.749	143.956	-940.507	248.167	-1459.744	-1246.521	-754.087	20.918
	1900.00	133.888	276.953	145.141	-938.231	250.443	-1464.442	-1245.776	-749.644	20.609
	2000.00	133.888	283.820	151.905	-924.843	263.831	-1492.483	-1241.409	-723.645	18.900
	2100.00	133.888	290.353	158.343	-911.454	277.220	-1521.194	-1237.066	-697.864	17.358
	2200.00	133.888	296.581	164.486	-898.065	290.609	-1550.544	-1232.746	-672.289	15.962
	2300.00	133.888	302.533	170.360	-884.676	303.998	-1580.501	-1228.450	-646.910	14.692
	2400.00	133.888	308.231	175.987	-871.287	317.387	-1611.042	-1224.177	-621.717	13.531
	2500.00	133.888	313.697	181.386	-857.899	330.775	-1642.140	-1219.927	-596.702	12.467

References

Phase	H / S	C _p
SOL	Ja1	Ja1
LIQ	Ja1	Ja1

LiAlSiO4

EUCRYPTITE

126.006

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL–B	298.15	113.397	103.801	103.801	–2124.200	0.000	–2155.148	–2124.200	–2010.108	352.163
	300.00	114.057	104.504	103.803	–2123.990	0.210	–2155.341	–2124.226	–2009.400	349.868
	400.00	138.258	141.071	108.624	–2111.221	12.979	–2167.650	–2124.643	–1971.017	257.388
	500.00	150.988	173.413	118.421	–2096.704	27.496	–2183.410	–2127.099	–1932.357	201.872
	600.00	159.203	201.712	129.995	–2081.170	43.030	–2202.197	–2125.993	–1893.504	164.844
	700.00	165.285	226.729	142.062	–2064.933	59.267	–2223.644	–2124.508	–1854.870	138.412
	800.00	170.232	249.132	154.070	–2048.150	76.050	–2247.456	–2122.812	–1816.464	118.603
	900.00	174.518	269.435	165.778	–2030.909	93.291	–2273.400	–2121.022	–1778.277	103.209
	1000.00	178.393	288.026	177.086	–2013.260	110.940	–2301.286	–2129.739	–1739.533	90.864
	1100.00	182.001	305.199	187.962	–1995.239	128.961	–2330.958	–2127.452	–1700.622	80.756
	1200.00	185.426	321.183	198.405	–1976.866	147.334	–2362.286	–2124.935	–1661.928	72.342
	1300.00	188.722	336.156	208.432	–1958.158	166.042	–2395.161	–2122.184	–1623.454	65.231
			0.965		1.255					
SOL–C	1300.00	194.974	337.122	208.432	–1956.903	167.297	–2395.161	–2120.929	–1623.454	65.231
	1400.00	199.995	351.754	218.151	–1937.155	187.045	–2429.611	–2117.231	–1585.323	59.149
	1500.00	205.016	365.724	227.527	–1916.904	207.296	–2465.490	–2113.120	–1547.471	53.888
	1600.00	210.037	379.116	236.585	–1896.151	228.049	–2502.736	–2108.592	–1509.906	49.293

References

Phase	H / S	C _p
SOL–B	Nb1	S5e
SOL–C	S5	S5

LiAlSi2O6

ALPHA–SPODUMENE

186.090

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL–A	298.15	159.001	129.290	129.290	–3054.701	0.000	–3093.249	–3054.701	–2881.432	504.815
	300.00	159.707	130.276	129.293	–3054.406	0.295	–3093.489	–3054.734	–2880.357	501.515
	400.00	186.924	180.367	135.938	–3036.929	17.772	–3109.076	–3055.536	–2822.066	368.524
	500.00	203.217	223.945	149.283	–3017.370	37.331	–3129.343	–3058.288	–2763.408	288.691
	600.00	215.209	262.098	164.972	–2996.425	58.276	–3153.684	–3057.307	–2704.512	235.449
	700.00	225.171	296.039	181.316	–2974.395	80.306	–3181.622	–3055.732	–2645.831	197.434
	800.00	234.051	326.695	197.603	–2951.427	103.274	–3212.783	–3053.696	–2587.407	168.940
	900.00	242.301	354.744	213.526	–2927.605	127.096	–3246.874	–3051.293	–2529.262	146.795
	1000.00	250.161	380.682	228.961	–2902.979	151.722	–3283.662	–3059.104	–2470.644	129.053
	1100.00	257.766	404.883	243.866	–2877.581	177.120	–3322.953	–3055.604	–2411.962	114.535
	1200.00	265.197	427.632	258.241	–2851.432	203.269	–3364.590	–3051.559	–2353.624	102.451

References

Phase	H / S	C _p
SOL–A	Nb1	S5,e

Phase	T [K]	C _p [J / (K mol)	S J / (K mol)	-(G-H298)/T [J / (K mol)	H [kJ / mol	H-H298 kJ / mol	G kJ / mol	ΔH _f kJ / mol	ΔG _f kJ / mol	log K _f [-]
SOL	298.15	162.802	154.390	154.390	-3026.701	0.000	-3072.732	-3026.701	-2860.916	501.221
	300.00	163.599	155.399	154.393	-3026.399	0.302	-3073.019	-3026.727	-2859.887	497.951
	400.00	193.217	207.036	161.232	-3008.379	18.322	-3091.194	-3026.986	-2804.184	366.189
	500.00	209.376	252.031	175.000	-2988.185	38.516	-3114.201	-3029.103	-2748.266	287.109
	600.00	220.236	291.217	191.176	-2966.676	60.025	-3141.406	-3027.558	-2692.234	234.380
	700.00	228.596	325.817	207.987	-2944.220	82.481	-3172.292	-3025.557	-2636.500	196.738
	800.00	235.622	356.812	224.686	-2921.001	105.700	-3206.450	-3023.270	-2581.074	168.527
	900.00	241.873	384.931	240.953	-2897.121	129.580	-3243.558	-3020.809	-2525.946	146.602
	1000.00	247.643	410.716	256.657	-2872.642	154.059	-3283.358	-3028.767	-2470.340	129.037
	1100.00	253.098	434.577	271.761	-2847.603	179.098	-3325.638	-3025.626	-2414.647	114.662
	1200.00	258.339	456.825	286.266	-2822.030	204.671	-3370.220	-3022.156	-2359.254	102.696
	1300.00	263.429	477.705	300.197	-2795.940	230.761	-3416.957	-3018.349	-2304.164	92.582
	1400.00	268.410	497.410	313.586	-2769.347	257.354	-3465.722	-3014.204	-2249.380	83.925
	1500.00	273.309	516.096	326.470	-2742.261	284.440	-3516.405	-3009.723	-2194.904	76.433
	1600.00	278.147	533.890	338.882	-2714.688	312.013	-3568.912	-3004.907	-2140.738	69.888
	1700.00	282.938	550.897	350.857	-2686.633	340.068	-3623.157	-3245.316	-2078.869	63.876

References

Phase	H / S	C _p
SOL	Nb1	S5

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	182.288	155.645	155.645	-3362.262	0.000	-3408.667	-3362.262	-3170.298	555.423
	300.00	182.558	156.773	155.648	-3361.925	0.337	-3408.956	-3362.290	-3169.107	551.791
	400.00	200.001	211.579	163.003	-3342.832	19.430	-3427.463	-3364.284	-3104.435	405.398
	500.00	219.452	258.290	177.491	-3321.863	40.399	-3451.007	-3372.813	-3038.573	317.438
	600.00	238.670	300.011	194.491	-3298.950	63.312	-3478.957	-3374.837	-2971.520	258.694
	700.00	256.889	338.185	212.329	-3274.162	88.100	-3510.892	-3375.914	-2904.202	216.714
	800.00	273.787	373.607	230.300	-3247.617	114.645	-3546.502	-3375.985	-2836.798	185.224
	900.00	289.213	406.760	248.084	-3219.454	142.808	-3585.538	-3375.053	-2769.445	160.734
	1000.00	303.085	437.963	265.527	-3189.826	172.436	-3627.789	-3373.165	-2702.248	141.151
	1100.00	315.357	467.439	282.556	-3158.890	203.372	-3673.073	-3370.403	-2635.284	125.139
	1190.00	325.012	492.623	297.498	-3130.064	232.198	-3716.285	-3367.251	-2575.259	113.040
LIQ			101.260		120.499					
	1190.00	467.688	593.882	297.498	-3009.565	352.697	-3716.285	-3246.752	-2575.259	113.040
	1200.00	467.950	597.797	299.985	-3004.887	357.375	-3722.243	-3244.943	-2569.624	111.853
	1300.00	470.571	635.357	324.356	-2957.961	404.301	-3783.924	-3226.873	-2514.080	101.017
	1400.00	473.192	670.326	347.833	-2910.772	451.490	-3849.229	-3208.821	-2459.927	91.781
	1500.00	475.813	703.062	370.436	-2863.322	498.940	-3917.915	-3190.767	-2407.065	83.821
	1600.00	478.434	733.854	392.196	-2815.610	546.652	-3989.776	-3172.692	-2355.407	76.896
	1700.00	481.055	762.937	413.157	-2767.635	594.627	-4064.629	-3444.997	-2290.640	70.383
	1800.00	483.675	790.508	433.362	-2719.399	642.863	-4142.313	-3425.349	-2223.303	64.519
	1900.00	486.296	816.729	452.855	-2670.900	691.362	-4222.686	-3405.672	-2157.060	59.302
	2000.00	488.917	841.740	471.678	-2622.140	740.122	-4305.619	-3385.959	-2091.853	54.634
	2100.00	491.538	865.657	489.874	-2573.117	789.145	-4390.997	-3366.207	-2027.633	50.435
	2200.00	494.159	888.584	507.480	-2523.832	838.430	-4478.717	-3346.412	-1964.355	46.640

References

Phase	H / S	C _p
SOL	Ja1	Ja1
LIQ	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	293.231	188.280	188.280	-4659.888	0.000	-4716.024	-4659.888	-4382.431	767.784
	300.00	293.622	190.095	188.286	-4659.345	0.543	-4716.374	-4659.834	-4380.710	762.749
	400.00	316.229	277.650	200.070	-4628.856	31.032	-4739.916	-4657.618	-4288.037	559.960
	500.00	336.684	350.475	223.063	-4596.182	63.706	-4771.419	-4662.492	-4195.179	438.267
	600.00	353.892	413.426	249.660	-4561.628	98.260	-4809.684	-4661.575	-4101.801	357.093
	700.00	368.361	469.097	277.107	-4525.495	134.393	-4853.863	-4660.498	-4008.588	299.124
	800.00	380.564	519.105	304.284	-4488.031	171.857	-4903.315	-4659.223	-3915.542	255.659
	900.00	390.841	564.540	330.715	-4449.446	210.442	-4957.532	-4657.741	-3822.669	221.862
	1000.00	399.429	606.177	356.209	-4409.919	249.969	-5016.097	-4656.072	-3729.971	194.834
	1100.00	406.503	644.590	380.702	-4369.611	290.277	-5078.660	-4654.261	-3637.448	172.728

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 NDPT= 1107.

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	79.480	75.312	75.312	-750.200	0.000	-772.654	-750.200	-694.686	121.706
	300.00	79.776	75.805	75.314	-750.053	0.147	-772.794	-750.199	-694.342	120.896
	400.00	91.987	100.572	78.608	-741.414	8.786	-781.643	-749.772	-675.770	88.246
	500.00	100.412	122.044	85.196	-731.776	18.424	-792.798	-751.980	-657.051	68.642
	600.00	107.347	140.979	92.946	-721.380	28.820	-805.968	-750.809	-638.168	55.557
	700.00	113.578	158.001	101.043	-710.330	39.870	-820.930	-749.269	-619.512	46.229
	800.00	119.435	173.553	109.149	-698.677	51.523	-837.519	-747.472	-601.096	39.248
	900.00	125.073	187.947	117.114	-686.450	63.750	-855.602	-745.574	-582.913	33.831
	1000.00	130.576	201.411	124.877	-673.667	76.533	-875.077	-743.916	-564.933	29.509

References

Phase	H / S	C _p
SOL	Nb1	e

LiOH

LITHIUM HYDROXIDE

23.948

Phase	T [K]	C _p [————— J / (K mol)]	S [————— J / (K mol)]	-(G-H298)/T [—————]	H [————— kJ / mol]	H-H298 [————— kJ / mol]	G [————— kJ / mol]	ΔH _f [————— kJ / mol]	ΔG _f [————— kJ / mol]	log K _f [—]
SOL	298.15	49.576	42.802	42.802	-484.926	0.000	-497.688	-484.926	-438.954	76.903
	300.00	49.778	43.110	42.803	-484.834	0.092	-497.767	-484.934	-438.669	76.379
	400.00	58.051	58.666	44.868	-479.407	5.519	-502.873	-485.059	-423.215	55.266
	500.00	63.650	72.249	49.016	-473.309	11.617	-509.434	-487.887	-407.464	42.567
	600.00	68.206	84.267	53.908	-466.711	18.215	-517.271	-487.311	-391.426	34.077
	700.00	72.279	95.091	59.031	-459.684	25.242	-526.248	-486.307	-375.519	28.022
	744.30	73.995	99.579	61.312	-456.444	28.482	-530.560	-485.742	-368.525	25.863
LIQ			28.051		20.878					
	744.30	87.086	127.629	61.312	-435.566	49.360	-530.560	-464.864	-368.525	25.863
	800.00	87.086	133.914	66.150	-430.715	54.211	-537.846	-463.385	-361.369	23.595
	900.00	87.086	144.171	74.261	-422.006	62.920	-551.761	-460.758	-348.775	20.242
	1000.00	87.086	153.347	81.719	-413.298	71.628	-566.645	-458.170	-336.472	17.575
	1100.00	87.086	161.647	88.613	-404.589	80.337	-582.401	-455.620	-324.426	15.406
	1200.00	87.086	169.224	95.020	-395.881	89.045	-598.950	-453.109	-312.610	13.608
	1300.00	87.086	176.195	101.000	-387.172	97.754	-616.225	-450.627	-301.003	12.094
	1400.00	87.086	182.649	106.604	-378.464	106.462	-634.172	-448.173	-289.585	10.805
	1500.00	87.086	188.657	111.876	-369.755	115.171	-652.740	-445.747	-278.342	9.693
	1600.00	87.086	194.277	116.853	-361.046	123.880	-671.890	-443.347	-267.261	8.725
	1700.00	87.086	199.557	121.564	-352.338	132.588	-691.584	-440.978	-256.957	7.957
	1800.00	87.086	204.534	126.036	-343.629	141.297	-711.791	-439.646	-247.475	7.359
	1900.00	87.086	209.243	130.293	-334.921	150.005	-732.482	-439.322	-239.015	6.911

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 BPT= 1897., L= 187.9 kJ, GAS (LiOH)

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]		[—————]		[————— kJ / mol —————]				[- -]
GAS	298.15	46.122	210.648	210.648	-234.304	0.000	-297.109	-234.304	-238.375	41.762
	300.00	46.201	210.934	210.649	-234.219	0.085	-297.499	-234.318	-238.400	41.509
	400.00	49.113	224.676	212.503	-229.435	4.869	-319.305	-235.087	-239.647	31.295
	500.00	50.664	235.816	216.087	-224.439	9.865	-342.348	-239.018	-240.378	25.112
	600.00	51.689	245.149	220.174	-219.319	14.985	-366.409	-239.919	-240.563	20.943
	700.00	52.479	253.178	224.329	-214.109	20.195	-391.334	-240.732	-240.605	17.954
	800.00	53.152	260.231	228.385	-208.827	25.477	-417.012	-241.497	-240.535	15.705
	900.00	53.763	266.527	232.279	-203.481	30.823	-443.355	-242.233	-240.370	13.951
	1000.00	54.337	272.221	235.993	-198.076	36.228	-470.297	-242.947	-240.124	12.543
	1100.00	54.885	277.426	239.527	-192.614	41.690	-497.783	-243.645	-239.808	11.388
	1200.00	55.413	282.225	242.887	-187.099	47.205	-525.769	-244.328	-239.429	10.422
	1300.00	55.920	286.680	246.087	-181.533	52.771	-554.217	-244.987	-238.994	9.603
	1400.00	56.404	290.842	249.137	-175.916	58.388	-583.095	-245.626	-238.509	8.899
	1500.00	56.862	294.749	252.048	-170.253	64.051	-612.377	-246.245	-237.979	8.287
	1600.00	57.290	298.433	254.833	-164.545	69.759	-642.038	-246.845	-237.408	7.751
	1700.00	57.681	301.918	257.502	-158.796	75.508	-672.057	-392.636	-229.680	7.057
	1800.00	58.031	305.225	260.062	-153.010	81.294	-702.415	-392.457	-220.099	6.387
	1900.00	58.333	308.371	262.522	-147.191	87.113	-733.096	-392.277	-210.529	5.788
	2000.00	58.582	311.370	264.890	-141.345	92.959	-764.085	-392.102	-200.968	5.249
	2100.00	58.771	314.233	267.172	-135.477	98.827	-795.366	-391.934	-191.415	4.761
	2200.00	58.894	316.970	269.374	-129.593	104.711	-826.927	-391.780	-181.870	4.318
	2300.00	58.945	319.589	271.501	-123.700	110.604	-858.756	-391.645	-172.332	3.914
	2400.00	58.916	322.098	273.557	-117.807	116.497	-890.841	-391.537	-162.799	3.543
	2500.00	58.802	324.501	275.547	-111.920	122.384	-923.172	-391.462	-153.270	3.202

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Li2(OH)2[g]

DILITHIUM DIHYDROXIDE (GAS)

47.897

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	71.234	269.768	269.768	–711.280	0.000	–791.711	–711.280	–674.244	118.125
	300.00	71.436	270.209	269.770	–711.148	0.132	–792.211	–711.347	–674.014	117.356
	400.00	81.756	292.221	272.701	–703.472	7.808	–820.360	–714.776	–661.043	86.323
	500.00	89.634	311.355	278.560	–694.882	16.398	–850.560	–724.039	–646.620	67.552
	600.00	95.529	328.243	285.461	–685.611	25.669	–882.556	–726.811	–630.866	54.922
	700.00	100.113	343.326	292.669	–675.820	35.460	–916.148	–729.066	–614.691	45.869
	800.00	103.808	356.944	299.866	–665.618	45.662	–951.173	–730.958	–598.219	39.060
	900.00	106.861	369.353	306.908	–655.080	56.200	–987.497	–732.583	–581.526	33.751
	1000.00	109.422	380.748	313.730	–644.262	67.018	–1025.010	–734.005	–564.664	29.495
	1100.00	111.695	391.286	320.307	–633.203	78.077	–1063.618	–735.265	–547.668	26.007
	1200.00	113.669	401.091	326.636	–621.933	89.347	–1103.243	–736.390	–530.563	23.095
	1300.00	115.409	410.260	332.719	–610.477	100.803	–1143.815	–737.387	–513.370	20.627
	1400.00	116.956	418.870	338.569	–598.857	112.423	–1185.276	–738.277	–496.104	18.510
	1500.00	118.340	426.988	344.195	–587.091	124.189	–1227.573	–739.075	–478.777	16.672
	1600.00	119.579	434.665	349.612	–575.194	136.086	–1270.659	–739.795	–461.400	15.063
	1700.00	120.690	441.949	354.831	–563.180	148.100	–1314.493	–1030.859	–429.739	13.204
	1800.00	121.681	448.876	359.865	–551.060	160.220	–1359.037	–1029.954	–394.405	11.445
	1900.00	122.560	455.479	364.725	–538.847	172.433	–1404.257	–1029.019	–359.122	9.873
	2000.00	123.335	461.785	369.421	–526.552	184.728	–1450.123	–1028.065	–323.889	8.459

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	100.481	80.291	80.291	–1649.500	0.000	–1673.439	–1649.500	–1558.740	273.085
	300.00	101.010	80.914	80.293	–1649.314	0.186	–1673.588	–1649.523	–1558.177	271.303
	400.00	118.825	112.799	84.520	–1638.188	11.312	–1683.308	–1650.206	–1527.602	199.484
	500.00	127.808	140.355	93.000	–1625.823	23.677	–1696.000	–1656.577	–1496.297	156.317
	600.00	134.295	164.255	102.929	–1612.704	36.796	–1711.257	–1656.530	–1464.236	127.473
	700.00	139.678	185.371	113.227	–1598.999	50.501	–1728.759	–1656.009	–1432.223	106.874
	800.00	144.400	204.337	123.450	–1584.790	64.710	–1748.260	–1655.119	–1400.310	91.431
	900.00	148.583	221.592	133.410	–1570.137	79.363	–1769.569	–1653.918	–1368.528	79.427
	1000.00	152.290	237.442	143.032	–1555.089	94.411	–1792.532	–1652.447	–1336.894	69.832
	1100.00	155.590	252.115	152.289	–1539.692	109.808	–1817.018	–1650.740	–1305.420	61.989
	1200.00	158.565	265.782	161.184	–1523.982	125.518	–1842.921	–1648.820	–1274.110	55.461
	1300.00	161.309	278.584	169.728	–1507.987	141.513	–1870.146	–1646.690	–1242.970	49.943
	1400.00	163.926	290.634	177.938	–1491.725	157.775	–1898.613	–1644.364	–1212.000	45.220
	1474.00	165.847	299.127	183.810	–1479.523	169.977	–1920.436	–1642.517	–1189.194	42.142
LIQ			19.018		28.033					
	1474.00	167.360	318.145	183.810	–1451.490	198.010	–1920.436	–1614.484	–1189.194	42.142
	1500.00	167.360	321.071	186.164	–1447.139	202.361	–1928.746	–1613.780	–1181.699	41.150
	1600.00	167.360	331.873	194.937	–1430.403	219.097	–1961.399	–1611.109	–1152.981	37.641
	1700.00	167.360	342.019	203.293	–1413.667	235.833	–1995.099	–1949.087	–1109.740	34.098
	1800.00	167.360	351.585	211.269	–1396.931	252.569	–2029.783	–1944.809	–1060.490	30.775
	1900.00	167.360	360.633	218.894	–1380.195	269.305	–2065.398	–1940.568	–1011.477	27.807
	2000.00	167.360	369.218	226.197	–1363.459	286.041	–2101.895	–1936.364	–962.687	25.143
	2100.00	167.360	377.383	233.204	–1346.723	302.777	–2139.228	–1932.196	–914.105	22.737
	2200.00	167.360	385.169	239.936	–1329.987	319.513	–2177.359	–1928.064	–865.722	20.555

References

Phase	H / S	C _p
SOL	Ja1	Ja1
LIQ	Ja1	Ja1

Li2Si2O5

LITHIUM DISILICATE

150.050

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL–A	298.15	138.072	125.520	125.520	–2560.901	0.000	–2598.325	–2560.901	–2416.851	423.422
	300.00	138.909	126.377	125.523	–2560.645	0.256	–2598.558	–2560.946	–2415.957	420.655
	400.00	174.891	171.743	131.461	–2544.789	16.112	–2613.486	–2561.991	–2367.402	309.151
	500.00	192.673	212.959	143.726	–2526.285	34.616	–2632.764	–2567.562	–2318.180	242.179
	600.00	205.685	249.330	158.355	–2506.316	54.585	–2655.914	–2566.201	–2268.414	197.483
	700.00	214.890	281.756	173.711	–2485.269	75.632	–2682.498	–2564.042	–2218.945	165.580
	800.00	222.589	310.964	189.072	–2463.387	97.514	–2712.158	–2561.324	–2169.825	141.675
	900.00	229.492	337.586	204.116	–2440.778	120.123	–2744.605	–2558.133	–2121.075	123.104
	1000.00	235.350	362.080	218.704	–2417.525	143.376	–2779.605	–2554.528	–2072.702	108.267
	1100.00	240.580	384.759	232.782	–2393.725	167.176	–2816.961	–2550.583	–2024.708	96.145
	1200.00	245.182	405.897	246.337	–2369.429	191.472	–2856.506	–2546.325	–1977.087	86.060
	1209.00	245.535	407.731	247.532	–2367.220	193.681	–2860.167	–2545.928	–1972.819	85.235
SOL–B			0.778		0.941					
	1209.00	248.178	408.509	247.532	–2366.279	194.622	–2860.167	–2544.987	–1972.819	85.235
	1300.00	248.178	426.520	259.438	–2343.695	217.206	–2898.171	–2540.782	–1929.908	77.545
	1307.00	248.178	427.852	260.337	–2341.958	218.943	–2901.161	–2540.463	–1926.619	76.998
LIQ			41.168		53.806					
	1307.00	251.040	469.020	260.337	–2288.152	272.749	–2901.161	–2486.657	–1926.619	76.998
	1400.00	251.040	486.276	274.779	–2264.805	296.096	–2945.591	–2482.225	–1886.925	70.402
	1500.00	251.040	503.596	289.463	–2239.701	321.200	–2995.095	–2477.588	–1844.566	64.233
	1600.00	251.040	519.797	303.358	–2214.597	346.304	–3046.273	–2473.082	–1802.512	58.846
	1700.00	251.040	535.017	316.542	–2189.493	371.408	–3099.022	–2859.468	–1745.601	53.636
	1800.00	251.040	549.366	329.081	–2164.389	396.512	–3153.248	–2853.257	–1680.259	48.760
	1900.00	251.040	562.939	341.036	–2139.285	421.616	–3208.869	–2847.107	–1615.261	44.407
	2000.00	251.040	575.815	352.456	–2114.181	446.720	–3265.812	–2841.018	–1550.584	40.497
	2100.00	251.040	588.064	363.386	–2089.077	471.824	–3324.011	–2834.987	–1486.211	36.967
	2200.00	251.040	599.742	373.866	–2063.973	496.928	–3383.406	–2829.015	–1422.124	33.766

References

Phase	H / S	C _p
SOL–A	Ja1	Ja1
SOL–B	Ja1	Ja1
LIQ	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol)]	S J / (K mol)	–(G–H298)/T [—————]	H [————— kJ / mol]	H–H298	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	146.629	121.336	121.336	–2330.070	0.000	–2366.246	–2330.070	–2203.625	386.066
	300.00	146.891	122.244	121.339	–2329.798	0.272	–2366.472	–2330.127	–2202.841	383.549
	400.00	158.504	166.191	127.252	–2314.495	15.575	–2380.971	–2333.345	–2159.937	282.059
	500.00	167.548	202.559	138.778	–2298.180	31.890	–2399.459	–2349.167	–2114.934	220.946
	600.00	175.582	233.827	152.073	–2281.018	49.052	–2421.314	–2352.611	–2067.751	180.014
	700.00	183.140	261.465	165.763	–2263.079	66.991	–2446.104	–2355.336	–2020.050	150.738
	800.00	190.442	286.398	179.308	–2244.398	85.672	–2473.517	–2357.448	–1972.000	128.758
	900.00	197.597	309.243	192.494	–2224.995	105.075	–2503.314	–2358.983	–1923.721	111.650
	1000.00	204.660	330.429	205.240	–2204.882	125.188	–2535.310	–2359.952	–1875.302	97.956
	1100.00	211.663	350.264	217.532	–2184.065	146.005	–2569.355	–2360.350	–1826.813	86.748
	1200.00	218.626	368.979	229.380	–2162.550	167.520	–2605.326	–2360.168	–1778.313	77.408
	1300.00	225.559	386.753	240.807	–2140.341	189.729	–2643.120	–2359.364	–1729.853	69.506
	1400.00	232.472	403.722	251.842	–2117.439	212.631	–2682.649	–2357.937	–1681.479	62.737
	1500.00	239.369	419.996	262.514	–2093.847	236.223	–2723.841	–2355.883	–1633.228	56.874
	1528.00	241.298	424.441	265.440	–2087.118	242.952	–2735.663	–2355.195	–1619.745	55.371
			20.372		31.129					
LIQ	1528.00	287.022	444.813	265.440	–2055.989	274.081	–2735.663	–2324.066	–1619.745	55.371
	1600.00	287.022	458.029	273.812	–2035.323	294.747	–2768.169	–2318.956	–1586.676	51.800
	1700.00	287.022	475.429	285.165	–2006.621	323.449	–2814.851	–2942.907	–1512.195	46.464
	1800.00	287.022	491.835	296.195	–1977.919	352.151	–2863.222	–2932.685	–1428.331	41.449
	1900.00	287.022	507.353	306.904	–1949.216	380.854	–2913.188	–2922.514	–1345.033	36.978
	2000.00	287.022	522.076	317.298	–1920.514	409.556	–2964.666	–2912.393	–1262.270	32.967
	2100.00	287.022	536.080	327.385	–1891.812	438.258	–3017.579	–2902.322	–1180.012	29.351
	2200.00	287.022	549.432	337.177	–1863.110	466.960	–3071.860	–2892.301	–1098.232	26.075

References

Phase	H / S	C _p
SOL	S5	S5
LIQ	S5	e

Li2TiO3

DILITHIUM TITANIUM TRIOXIDE

109.760

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL–A	298.15	109.864	91.755	91.755	–1670.671	0.000	–1698.028	–1670.671	–1579.770	276.769
	300.00	110.355	92.436	91.757	–1670.467	0.204	–1698.198	–1670.686	–1579.206	274.964
	400.00	127.284	126.852	96.335	–1658.464	12.207	–1709.205	–1670.957	–1548.648	202.233
	500.00	135.815	156.252	105.456	–1645.273	25.398	–1723.399	–1676.925	–1517.464	158.528
	600.00	141.460	181.541	116.079	–1631.394	39.277	–1740.319	–1676.526	–1485.601	129.333
	700.00	145.695	203.679	127.045	–1617.027	53.644	–1759.603	–1675.766	–1453.837	108.487
	800.00	149.047	223.361	137.877	–1602.284	68.387	–1780.973	–1674.805	–1422.196	92.860
	900.00	151.758	241.078	148.376	–1587.239	83.432	–1804.209	–1673.732	–1390.684	80.713
	1000.00	153.968	257.186	158.464	–1571.949	98.722	–1829.135	–1672.603	–1359.294	71.002
	1100.00	155.775	271.948	168.119	–1556.459	114.212	–1855.602	–1671.453	–1328.019	63.062
	1200.00	157.256	285.568	177.346	–1540.805	129.866	–1883.486	–1674.302	–1296.730	56.445
	1300.00	158.483	298.205	186.163	–1525.016	145.655	–1912.683	–1672.623	–1265.333	50.842
	1400.00	159.520	309.989	194.591	–1509.115	161.556	–1943.099	–1670.922	–1234.067	46.044
	1485.00	160.299	319.414	201.469	–1495.522	175.149	–1969.852	–1669.474	–1207.587	42.477
SOL–B			7.748		11.506					
	1485.00	176.063	327.162	201.469	–1484.016	186.655	–1969.852	–1657.968	–1207.587	42.477
	1500.00	176.565	328.934	202.735	–1481.371	189.300	–1974.773	–1657.474	–1203.040	41.894
	1600.00	179.912	340.437	210.984	–1463.547	207.124	–2008.246	–1654.043	–1172.855	38.290
	1700.00	183.259	351.444	218.925	–1445.389	225.282	–2042.844	–1940.794	–1128.650	34.679
	1800.00	186.606	362.014	226.583	–1426.896	243.775	–2078.520	–1935.406	–1081.031	31.371
LIQ	1820.00	187.276	364.079	228.082	–1423.157	247.514	–2085.781	–1934.305	–1071.544	30.754
			60.461		110.039					
	1820.00	200.832	424.540	228.082	–1313.118	357.553	–2085.781	–1824.266	–1071.544	30.754
	1900.00	200.832	433.180	236.537	–1297.051	373.620	–2120.092	–1818.800	–1038.576	28.552
	2000.00	200.832	443.481	246.629	–1276.968	393.703	–2163.930	–1826.221	–997.241	26.045
	2100.00	200.832	453.279	256.238	–1256.885	413.786	–2208.772	–1819.543	–955.957	23.778
	2200.00	200.832	462.622	265.409	–1236.802	433.869	–2254.570	–1812.900	–914.990	21.725

References

Phase	H / S	C _p
SOL–A	Ja1	Ja1
SOL–B	Ja1	Ja1
LIQ	Ja1	Ja1

153.104

DILITHIUM ZIRCONIUM TRIOXIDE

Li2ZrO3

Phase	T [K]	C _p [J / (K mol)	S J / (K mol)	-(G-H298)/T []	H []	H-H298 kJ / mol	G kJ / mol	ΔH _f []	ΔG _f []	log K _f [-]
SOL	298.15	109.536	91.630	91.630	-1760.200	0.000	-1787.519	-1760.200	-1666.843	292.024
	300.00	110.041	92.309	91.632	-1759.997	0.203	-1787.690	-1760.216	-1666.264	290.122
	400.00	128.670	126.848	96.214	-1747.946	12.254	-1798.686	-1760.411	-1634.887	213.494
	500.00	138.656	156.725	105.403	-1734.539	25.661	-1812.901	-1766.086	-1602.930	167.457
	600.00	145.240	182.621	116.164	-1720.326	39.874	-1829.898	-1765.259	-1570.366	136.713
	700.00	150.219	205.398	127.317	-1705.543	54.657	-1849.322	-1763.977	-1537.981	114.766
	800.00	154.341	225.733	138.371	-1690.310	69.890	-1870.897	-1762.404	-1505.800	98.319
	900.00	157.965	244.125	149.116	-1674.691	85.509	-1894.404	-1760.624	-1473.830	85.539
	1000.00	161.280	260.942	159.469	-1658.727	101.473	-1919.669	-1758.683	-1442.066	75.326
	1100.00	164.394	276.461	169.408	-1642.442	117.758	-1946.549	-1756.604	-1410.504	66.979
	1200.00	167.369	290.894	178.938	-1625.853	134.347	-1974.925	-1758.108	-1378.916	60.023
	1300.00	170.248	304.404	188.075	-1608.971	151.229	-2004.697	-1755.218	-1347.432	54.140
	1400.00	173.057	317.124	196.843	-1591.806	168.394	-2035.780	-1752.116	-1316.179	49.107
	1500.00	175.813	329.158	205.266	-1574.362	185.838	-2068.099	-1748.812	-1285.155	44.753

References

Phase	H / S	C _p
SOL	Nb1/K7	e

45.948

LITHIUM SULFIDE

Li2S

Phase	T [K]	C _p [J / (K mol)	S J / (K mol)	-(G-H298)/T []	H []	H-H298 kJ / mol	G kJ / mol	ΔH _f []	ΔG _f []	log K _f [-]
SOL	298.15	38.615	62.760	62.760	-447.270	0.000	-465.982	-447.270	-439.084	76.926
	300.00	38.738	62.999	62.761	-447.198	0.072	-466.098	-447.332	-439.033	76.442
	400.00	45.416	75.058	64.360	-442.991	4.279	-473.014	-452.934	-435.670	56.893
	500.00	52.093	85.910	67.600	-438.115	9.155	-481.070	-463.831	-430.198	44.942
	600.00	58.770	95.997	71.501	-432.572	14.698	-490.171	-467.819	-423.075	36.832
	700.00	65.447	105.558	75.689	-426.361	20.909	-500.252	-470.771	-415.373	30.996
	800.00	72.125	114.734	79.999	-419.483	27.787	-511.270	-473.057	-407.297	26.594
	900.00	78.802	123.614	84.354	-411.936	35.334	-523.189	-527.500	-397.818	23.089
	1000.00	85.479	132.262	88.715	-403.722	43.548	-535.985	-526.896	-383.435	20.029
	1100.00	92.156	140.722	93.059	-394.841	52.429	-549.635	-525.627	-369.144	17.529
	1200.00	98.834	149.027	97.378	-385.291	61.979	-564.124	-523.694	-354.999	15.453
	1300.00	105.511	157.202	101.666	-375.074	72.196	-579.436	-521.079	-341.043	13.703
	1400.00	112.188	165.266	105.922	-364.189	83.081	-595.561	-517.785	-327.313	12.212
	1500.00	118.865	173.233	110.144	-352.636	94.634	-612.486	-513.812	-313.842	10.929
	1600.00	125.543	181.118	114.334	-340.416	106.854	-630.205	-509.158	-300.659	9.816
	1643.00	128.414	184.485	116.126	-334.956	112.314	-638.065	-798.223	-291.073	9.254

References

Phase	H / S	C _p	Remarks
SOL	Tk1	e	Tk1 MPT= 1643.

Li2SO4

LITHIUM SULFATE

109.946

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
SOL–A	298.15	120.960	115.102	115.102	–1436.489	0.000	–1470.807	–1436.489	–1321.580	231.535
	300.00	121.237	115.851	115.104	–1436.265	0.224	–1471.020	–1436.507	–1320.866	229.983
	400.00	136.195	152.777	120.038	–1423.393	13.096	–1484.504	–1439.388	–1282.114	167.427
	500.00	151.153	184.775	129.849	–1409.026	27.463	–1501.413	–1446.910	–1242.018	129.753
	600.00	166.111	213.656	141.445	–1393.163	43.326	–1521.356	–1446.897	–1201.008	104.557
	700.00	181.070	240.385	153.692	–1375.804	60.685	–1544.073	–1445.210	–1160.140	86.571
	800.00	196.028	265.540	166.115	–1356.949	79.540	–1569.381	–1442.194	–1119.607	73.103
	848.00	203.208	277.170	172.073	–1347.367	89.122	–1582.407	–1440.329	–1100.305	67.776
SOL–B			33.551		28.451					
	848.00	213.384	310.720	172.073	–1318.916	117.573	–1582.407	–1411.878	–1100.305	67.776
	900.00	213.384	323.420	180.454	–1307.820	128.669	–1598.898	–1461.866	–1080.133	62.689
	1000.00	213.384	345.902	195.895	–1286.482	150.007	–1632.384	–1455.061	–1038.084	54.224
	1100.00	213.384	366.240	210.471	–1265.143	171.346	–1668.007	–1448.354	–996.711	47.330
LIQ	1132.00	213.384	372.359	214.961	–1258.315	178.174	–1679.825	–1446.226	–983.603	45.387
			7.577		8.577					
	1132.00	205.016	379.936	214.961	–1249.738	186.751	–1679.825	–1437.649	–983.603	45.387
	1200.00	205.016	391.895	224.652	–1235.797	200.692	–1706.071	–1433.721	–956.444	41.633
	1300.00	205.016	408.305	238.156	–1215.295	221.194	–1746.092	–1427.989	–916.904	36.842

References

Phase	H / S	C _p
SOL–A	Nb1	Pa3
SOL–B	Pa3	Pa3
LIQ	Pa3	Pa3

Li2Se

LITHIUM SELENIDE

92.842

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
SOL	298.15	71.471	71.128	71.128	–419.199	0.000	–440.406	–419.199	–410.466	71.912
	300.00	71.505	71.570	71.129	–419.067	0.132	–440.538	–419.205	–410.412	71.459
	400.00	73.304	92.387	73.956	–411.826	7.373	–448.781	–419.861	–407.400	53.201
	500.00	75.103	108.938	79.352	–404.406	14.793	–458.875	–433.121	–403.446	42.148
	600.00	76.902	122.790	85.468	–396.806	22.393	–470.480	–434.991	–397.330	34.591
	700.00	78.701	134.779	91.674	–389.026	30.173	–483.371	–436.578	–390.925	29.171
	800.00	80.500	145.406	97.739	–381.066	38.133	–497.390	–437.937	–384.308	25.093
	900.00	82.299	154.991	103.576	–372.926	46.273	–512.418	–439.095	–377.532	21.911
	1000.00	84.098	163.755	109.162	–364.606	54.593	–528.361	–440.064	–370.638	19.360
	1100.00	85.898	171.855	114.498	–356.106	63.093	–545.147	–494.161	–358.702	17.033
	1200.00	87.697	179.406	119.596	–347.426	71.773	–562.714	–493.317	–346.424	15.079
	1300.00	89.496	186.497	124.472	–338.567	80.632	–581.012	–492.262	–334.224	13.429
	1375.00	90.845	191.554	127.994	–331.804	87.395	–595.191	–491.334	–325.132	12.351

References

Phase	H / S	C _p	Remarks
SOL	Nb1/Mi1	Mi1	MPT= 1375.

Phase	T [K]	C _p [————— J / (K mol) —————]	S [(K mol) —————]	–(G–H ₂₉₈)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H ₂₉₈ [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _r [— —]
SOL	298.15	74.026	77.404	77.404	–355.640	0.000	–378.718	–355.640	–346.620	60.726
	300.00	74.057	77.862	77.405	–355.503	0.137	–378.862	–355.642	–346.564	60.342
	400.00	75.730	99.396	80.330	–348.014	7.626	–387.772	–356.066	–343.492	44.855
	500.00	77.404	116.475	85.908	–340.357	15.283	–398.594	–363.186	–339.622	35.480
	600.00	79.078	130.735	92.223	–332.533	23.107	–410.974	–364.444	–334.789	29.146
	700.00	80.751	143.050	98.624	–324.541	31.099	–424.677	–365.654	–329.751	24.606
	800.00	82.425	153.943	104.871	–316.383	39.257	–439.537	–384.491	–322.659	21.067
	900.00	84.098	163.747	110.877	–308.056	47.584	–455.429	–385.713	–314.855	18.274
	1000.00	85.772	172.695	116.618	–299.563	56.077	–472.258	–386.760	–306.924	16.032
	1100.00	87.446	180.948	122.095	–290.902	64.738	–489.945	–387.635	–298.897	14.193

References

Phase	H / S	C _p
SOL	Mi1	e

Lu

LUTETIUM

174.967

Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	26.783	50.961	50.961	0.000	0.000	–15.194	0.000	0.000	0.000
	300.00	26.786	51.127	50.962	0.050	0.050	–15.288	0.000	0.000	0.000
	400.00	26.890	58.850	52.014	2.734	2.734	–20.806	0.000	0.000	0.000
	500.00	26.997	64.860	54.004	5.428	5.428	–27.002	0.000	0.000	0.000
	600.00	27.238	69.801	56.237	8.138	8.138	–33.742	0.000	0.000	0.000
	700.00	27.655	74.028	58.484	10.881	10.881	–40.939	0.000	0.000	0.000
	800.00	28.397	77.768	60.665	13.682	13.682	–48.532	0.000	0.000	0.000
	900.00	29.285	81.162	62.756	16.565	16.565	–56.481	0.000	0.000	0.000
	1000.00	30.308	84.299	64.756	19.544	19.544	–64.756	0.000	0.000	0.000
	1100.00	31.486	87.242	66.667	22.632	22.632	–73.334	0.000	0.000	0.000
	1200.00	32.843	90.039	68.499	25.847	25.847	–82.199	0.000	0.000	0.000
	1300.00	34.389	92.727	70.260	29.207	29.207	–91.338	0.000	0.000	0.000
	1400.00	36.122	95.338	71.959	32.731	32.731	–100.742	0.000	0.000	0.000
	1500.00	38.033	97.894	73.603	36.437	36.437	–110.404	0.000	0.000	0.000
	1600.00	40.106	100.414	75.200	40.343	40.343	–120.320	0.000	0.000	0.000
	1700.00	42.317	102.911	76.757	44.463	44.463	–130.486	0.000	0.000	0.000
	1800.00	44.641	105.395	78.279	48.810	48.810	–140.901	0.000	0.000	0.000
	1900.00	47.048	107.873	79.771	53.394	53.394	–151.565	0.000	0.000	0.000
	1936.00	47.929	108.765	80.302	55.104	55.104	–155.464	0.000	0.000	0.000
LIQ			9.632		18.648					
	1936.00	47.907	118.397	80.302	73.752	73.752	–155.464	0.000	0.000	0.000
	2000.00	47.907	119.955	81.546	76.818	76.818	–163.092	0.000	0.000	0.000
	2100.00	47.907	122.292	83.431	81.609	81.609	–175.205	0.000	0.000	0.000
	2200.00	47.907	124.521	85.249	86.399	86.399	–187.547	0.000	0.000	0.000
	2300.00	47.907	126.650	87.003	91.190	91.190	–200.106	0.000	0.000	0.000
	2400.00	47.907	128.689	88.697	95.981	95.981	–212.874	0.000	0.000	0.000
	2500.00	47.907	130.645	90.336	100.771	100.771	–225.841	0.000	0.000	0.000
	2600.00	47.907	132.524	91.923	105.562	105.562	–239.000	0.000	0.000	0.000
	2700.00	47.907	134.332	93.461	110.353	110.353	–252.344	0.000	0.000	0.000
	2800.00	47.907	136.074	94.952	115.143	115.143	–265.865	0.000	0.000	0.000
	2900.00	47.907	137.755	96.399	119.934	119.934	–279.556	0.000	0.000	0.000
	3000.00	47.907	139.379	97.805	124.725	124.725	–293.414	0.000	0.000	0.000
	3100.00	47.907	140.950	99.171	129.515	129.515	–307.431	0.000	0.000	0.000
	3200.00	47.907	142.471	100.501	134.306	134.306	–321.602	0.000	0.000	0.000
	3300.00	47.907	143.945	101.795	139.097	139.097	–335.923	0.000	0.000	0.000
	3400.00	47.907	145.376	103.056	143.887	143.887	–350.390	0.000	0.000	0.000
	3500.00	47.907	146.764	104.285	148.678	148.678	–364.997	0.000	0.000	0.000
	3600.00	47.907	148.114	105.484	153.469	153.469	–379.741	0.000	0.000	0.000
	3664.00	47.907	148.958	106.236	156.535	156.535	–389.248	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL	Hu1	Hu1	
LIQ	Hu1	Hu1	Hu1 BPT= 3664., L= 355.9 kJ

174.967

LUTETIUM (GAS)

Lu[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
GAS	298.15	20.861	184.800	184.800	427.605	0.000	372.507	427.605	387.701	–67.924
	300.00	20.870	184.929	184.800	427.644	0.039	372.165	427.594	387.453	–67.462
	400.00	21.276	190.983	185.623	429.749	2.144	353.356	427.015	374.161	–48.860
	500.00	22.097	195.812	187.193	431.914	4.309	334.009	426.487	361.011	–37.715
	600.00	23.142	199.932	188.980	434.176	6.571	314.217	426.038	347.959	–30.293
	700.00	24.154	203.576	190.810	436.542	8.937	294.038	425.660	334.977	–24.996
	800.00	25.003	206.859	192.614	439.001	11.396	273.514	425.319	322.045	–21.027
	900.00	25.644	209.843	194.365	441.535	13.930	252.676	424.970	309.157	–17.943
	1000.00	26.075	212.569	196.052	444.123	16.518	231.553	424.579	296.309	–15.478
	1100.00	26.326	215.068	197.668	446.744	19.139	210.170	424.112	283.504	–13.462
	1200.00	26.439	217.364	199.215	449.383	21.778	188.547	423.536	270.746	–11.785
	1300.00	26.466	219.482	200.694	452.029	24.424	166.703	422.822	258.041	–10.368
	1400.00	26.419	221.442	202.107	454.674	27.069	144.656	421.943	245.398	–9.156
	1500.00	26.333	223.261	203.457	457.312	29.707	122.419	420.874	232.823	–8.108
	1600.00	26.224	224.958	204.748	459.940	32.335	100.007	419.596	220.327	–7.193
	1700.00	26.104	226.544	205.984	462.556	34.951	77.431	418.093	207.918	–6.389
	1800.00	25.978	228.032	207.168	465.160	37.555	54.702	416.350	195.603	–5.676
	1900.00	25.853	229.434	208.304	467.752	40.147	31.828	414.357	183.393	–5.042
	2000.00	25.732	230.757	209.394	470.331	42.726	8.818	393.513	171.910	–4.490
	2100.00	25.618	232.009	210.441	472.898	45.293	–14.321	391.290	160.884	–4.002
	2200.00	25.512	233.199	211.449	475.455	47.850	–37.582	389.056	149.965	–3.561
	2300.00	25.416	234.330	212.419	478.001	50.396	–60.959	386.811	139.147	–3.160
	2400.00	25.333	235.410	213.355	480.539	52.934	–84.446	384.558	128.428	–2.795
	2500.00	25.262	236.443	214.258	483.068	55.463	–108.039	382.297	117.802	–2.461
	2600.00	25.206	237.433	215.130	485.591	57.986	–131.733	380.029	107.267	–2.155
	2700.00	25.165	238.383	215.974	488.110	60.505	–155.525	377.757	96.819	–1.873
	2800.00	25.141	239.298	216.791	490.625	63.020	–179.409	375.482	86.456	–1.613
	2900.00	25.135	240.180	217.582	493.139	65.534	–203.383	373.205	76.173	–1.372
	3000.00	25.148	241.032	218.350	495.653	68.048	–227.444	370.928	65.970	–1.149
	3100.00	25.182	241.857	219.095	498.169	70.564	–251.589	368.654	55.842	–0.941
	3200.00	25.237	242.658	219.819	500.690	73.085	–275.814	366.384	45.788	–0.747
	3300.00	25.315	243.435	220.523	503.217	75.612	–300.119	364.120	35.804	–0.567
	3400.00	25.417	244.192	221.208	505.753	78.148	–324.501	361.866	25.889	–0.398
	3500.00	25.544	244.931	221.875	508.301	80.696	–348.957	359.623	16.040	–0.239
	3600.00	25.698	245.653	222.525	510.863	83.258	–373.486	357.394	6.255	–0.091
	3700.00	25.879	246.359	223.160	513.442	85.837	–398.087	0.000	0.000	0.000
	3800.00	25.878	247.049	223.780	516.030	88.425	–422.758	0.000	0.000	0.000
	3900.00	25.878	247.721	224.385	518.617	91.012	–447.496	0.000	0.000	0.000
	4000.00	25.878	248.377	224.977	521.205	93.600	–472.302	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1,e

Lu2O3

LUTETIUM OXIDE

397.932

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [————— kJ / mol —————]	H–H298	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	101.755	109.956	109.956	–1878.198	0.000	–1910.981	–1878.198	–1788.846	313.398
	300.00	102.026	110.586	109.957	–1878.010	0.188	–1911.185	–1878.190	–1788.292	311.369
	400.00	111.877	141.469	114.101	–1867.251	10.947	–1923.839	–1877.258	–1758.443	229.629
	500.00	116.954	167.030	122.207	–1855.786	22.412	–1939.302	–1875.769	–1728.904	180.617
	600.00	120.150	188.655	131.526	–1843.921	34.277	–1957.114	–1874.064	–1699.690	147.971
	700.00	122.460	207.357	141.054	–1831.785	46.413	–1976.935	–1872.296	–1670.767	124.674
	800.00	124.296	223.833	150.392	–1819.445	58.753	–1998.511	–1870.563	–1642.096	107.218
	900.00	125.857	238.565	159.385	–1806.935	71.263	–2021.644	–1868.927	–1613.638	93.653
	1000.00	127.248	251.899	167.980	–1794.279	83.919	–2046.178	–1867.421	–1585.354	82.810
	1100.00	128.526	264.088	176.171	–1781.489	96.709	–2071.986	–1866.072	–1557.214	73.946
	1200.00	129.729	275.323	183.971	–1768.576	109.622	–2098.964	–1864.912	–1529.189	66.564
	1300.00	130.879	285.752	191.404	–1755.545	122.653	–2127.024	–1863.976	–1501.252	60.321
	1400.00	131.989	295.492	198.495	–1742.402	135.796	–2156.091	–1863.300	–1473.377	54.972
	1500.00	133.071	304.636	205.269	–1729.148	149.050	–2186.102	–1862.921	–1445.540	50.338
	1600.00	134.131	313.258	211.752	–1715.788	162.410	–2217.001	–1862.873	–1417.718	46.284
	1700.00	135.174	321.421	217.965	–1702.323	175.875	–2248.738	–1863.186	–1389.889	42.706
	1800.00	136.204	329.176	223.930	–1688.754	189.444	–2281.272	–1863.885	–1362.029	39.525
	1900.00	137.223	336.568	229.665	–1675.082	203.116	–2314.562	–1864.990	–1334.120	36.678
	2000.00	138.234	343.632	235.188	–1661.310	216.888	–2348.574	–1903.709	–1304.910	34.081

References

Phase	H / S	C _p
SOL	Nb1	Pa1

24.305

MAGNESIUM

Mg

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
SOL	298.15	24.900	32.677	32.677	0.000	0.000	-9.743	0.000	0.000	0.000
	300.00	24.922	32.831	32.677	0.046	0.046	-9.803	0.000	0.000	0.000
	400.00	26.100	40.162	33.669	2.597	2.597	-13.468	0.000	0.000	0.000
	500.00	27.278	46.113	35.580	5.266	5.266	-17.790	0.000	0.000	0.000
	600.00	28.455	51.190	37.769	8.053	8.053	-22.661	0.000	0.000	0.000
	700.00	29.633	55.665	40.012	10.957	10.957	-28.008	0.000	0.000	0.000
	800.00	30.811	59.699	42.224	13.979	13.979	-33.780	0.000	0.000	0.000
	900.00	31.989	63.396	44.374	17.119	17.119	-39.937	0.000	0.000	0.000
	922.00	32.248	64.171	44.837	17.826	17.826	-41.340	0.000	0.000	0.000
LIQ			9.711		8.954					
	922.00	32.635	73.883	44.837	26.780	26.780	-41.340	0.000	0.000	0.000
	1000.00	32.635	76.533	47.208	29.325	29.325	-47.208	0.000	0.000	0.000
	1100.00	32.635	79.644	50.017	32.589	32.589	-55.019	0.000	0.000	0.000
	1200.00	32.635	82.483	52.606	35.853	35.853	-63.127	0.000	0.000	0.000
	1300.00	32.635	85.095	55.006	39.116	39.116	-71.508	0.000	0.000	0.000
	1361.00	32.635	86.592	56.389	41.107	41.107	-76.745	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL	Hu1	Hu1	
LIQ	Hu1	Hu1	BPT= 1361., L= 127.4 kJ

Mg[g]

MAGNESIUM (GAS)

24.305

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	20.786	148.646	148.646	146.440	0.000	102.121	146.440	111.864	–19.598
	300.00	20.786	148.774	148.646	146.478	0.038	101.846	146.432	111.649	–19.440
	400.00	20.786	154.754	149.461	148.557	2.117	86.655	145.960	100.123	–13.075
	500.00	20.786	159.392	151.001	150.636	4.196	70.940	145.370	88.730	–9.270
	600.00	20.786	163.182	152.725	152.714	6.274	54.805	144.662	77.466	–6.744
	700.00	20.786	166.386	154.453	154.793	8.353	38.323	143.836	66.331	–4.950
	800.00	20.786	169.162	156.122	156.872	10.432	21.542	142.892	55.322	–3.612
	900.00	20.786	171.610	157.710	158.950	12.510	4.501	141.831	44.438	–2.579
	1000.00	20.786	173.800	159.211	161.029	14.589	–12.771	131.703	34.436	–1.799
	1100.00	20.786	175.781	160.629	163.107	16.667	–30.252	130.518	24.767	–1.176
	1200.00	20.786	177.590	161.968	165.186	18.746	–47.922	129.333	15.205	–0.662
	1300.00	20.786	179.254	163.235	167.265	20.825	–65.765	128.149	5.743	–0.231
	1400.00	20.786	180.794	164.435	169.343	22.903	–83.768	0.000	0.000	0.000
	1500.00	20.786	182.228	165.574	171.422	24.982	–101.920	0.000	0.000	0.000
	1600.00	20.786	183.570	166.657	173.500	27.060	–120.211	0.000	0.000	0.000
	1700.00	20.786	184.830	167.689	175.579	29.139	–138.632	0.000	0.000	0.000
	1800.00	20.786	186.018	168.675	177.658	31.218	–157.175	0.000	0.000	0.000
	1900.00	20.786	187.142	169.617	179.736	33.296	–175.833	0.000	0.000	0.000
	2000.00	20.786	188.208	170.521	181.815	35.375	–194.601	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

Mg3(AsO4)2

MAGNESIUM ARSENATE

350.753

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	236.313	225.099	225.099	–3059.759	0.000	–3126.872	–3059.759	–2831.694	496.101
	300.00	237.195	226.564	225.104	–3059.321	0.438	–3127.290	–3059.768	–2830.279	492.795
	400.00	270.079	299.870	234.875	–3033.761	25.998	–3153.709	–3058.759	–2753.867	359.618
	500.00	288.215	362.242	254.276	–3005.776	53.983	–3186.897	–3056.149	–2677.926	279.761
	600.00	300.545	415.937	276.850	–2976.306	83.453	–3225.869	–3052.923	–2602.578	226.575
	700.00	310.134	463.011	300.151	–2945.756	114.003	–3269.864	–3049.460	–2527.793	188.626
	800.00	318.263	504.967	323.177	–2914.328	145.431	–3318.301	–3045.910	–2453.511	160.198
	900.00	325.542	542.879	345.516	–2882.132	177.627	–3370.723	–3042.321	–2379.676	138.113
	1000.00	332.293	577.532	367.009	–2849.237	210.522	–3426.768	–3065.511	–2303.970	120.347
	1100.00	338.700	609.505	387.620	–2815.685	244.074	–3486.141	–3061.461	–2228.009	105.799
	1200.00	344.872	639.242	407.363	–2781.504	278.255	–3548.595	–3057.169	–2152.430	93.693
	1225.00	346.388	646.369	412.168	–2772.864	286.895	–3564.665	–3056.094	–2133.592	90.977

References

Phase	H / S	C _p
SOL	G1	G1

45.927

MAGNESIUM DIBORIDE

MgB2

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	47.981	35.982	35.982	-92.048	0.000	-102.776	-92.048	-89.557	15.690
	300.00	48.128	36.280	35.983	-91.959	0.089	-102.843	-92.047	-89.542	15.591
	400.00	54.104	51.020	37.953	-86.821	5.227	-107.229	-92.190	-88.696	11.582
	500.00	58.091	63.543	41.850	-81.202	10.846	-112.973	-92.700	-87.770	9.169
	600.00	61.295	74.425	46.392	-75.228	16.820	-119.883	-93.475	-86.714	7.549
	700.00	64.128	84.090	51.099	-68.955	23.093	-127.818	-94.416	-85.515	6.381
	800.00	66.765	92.827	55.778	-62.409	29.639	-136.670	-95.458	-84.173	5.496
	900.00	69.287	100.837	60.345	-55.606	36.442	-146.359	-96.559	-82.697	4.800
	1000.00	71.738	108.264	64.770	-48.554	43.494	-156.818	-106.639	-80.338	4.196
	1100.00	74.143	115.215	69.043	-41.259	50.789	-167.996	-107.668	-77.658	3.688
	1200.00	76.516	121.768	73.167	-33.726	58.322	-179.848	-108.576	-74.888	3.260
	1300.00	78.867	127.985	77.146	-25.957	66.091	-192.338	-109.353	-72.049	2.895
	1320.00	79.335	129.193	77.926	-24.375	67.673	-194.910	-109.492	-71.474	2.828

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 DPT= 1320.

67.549

MAGNESIUM TETRABORIDE

MgB4

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	70.439	51.923	51.923	-105.018	0.000	-120.499	-105.018	-103.803	18.186
	300.00	70.604	52.360	51.925	-104.888	0.130	-120.595	-105.018	-103.796	18.072
	400.00	79.468	73.903	54.802	-97.378	7.640	-126.939	-105.518	-103.340	13.495
	500.00	87.166	92.485	60.521	-89.036	15.982	-135.278	-106.767	-102.662	10.725
	600.00	93.916	108.985	67.248	-79.976	25.042	-145.367	-108.416	-101.691	8.853
	700.00	100.072	123.931	74.294	-70.272	34.746	-157.024	-110.237	-100.427	7.494
	800.00	105.771	137.670	81.368	-59.976	45.042	-170.113	-112.096	-98.898	6.457
	900.00	111.011	150.436	88.342	-49.133	55.885	-184.525	-113.922	-97.139	5.638
	1000.00	115.704	162.380	95.155	-37.792	67.226	-200.173	-124.637	-94.421	4.932
	1100.00	119.720	173.602	101.781	-26.015	79.003	-216.977	-126.243	-91.320	4.336

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 DPT= 1100.

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	35.619	244.957	244.957	–35.146	0.000	–108.180	–35.146	–75.747	13.270
	300.00	35.643	245.178	244.958	–35.080	0.066	–108.633	–35.196	–75.998	13.233
	400.00	36.500	255.565	246.368	–31.467	3.679	–133.693	–51.375	–86.317	11.272
	500.00	36.926	263.760	249.056	–27.794	7.352	–159.674	–52.217	–94.957	9.920
	600.00	37.182	270.517	252.086	–24.088	11.058	–186.398	–53.157	–103.419	9.003
	700.00	37.358	276.263	255.140	–20.360	14.786	–213.744	–54.201	–111.715	8.336
	800.00	37.491	281.260	258.099	–16.617	18.529	–241.625	–55.355	–119.854	7.826
	900.00	37.599	285.682	260.923	–12.863	22.283	–269.977	–56.619	–127.841	7.420
	1000.00	37.692	289.649	263.601	–9.098	26.048	–298.747	–66.943	–134.925	7.048
	1100.00	37.774	293.245	266.135	–5.325	29.821	–327.894	–68.320	–141.656	6.727
	1200.00	37.850	296.535	268.533	–1.544	33.602	–357.386	–69.692	–148.262	6.454
	1300.00	37.921	299.567	270.805	2.245	37.391	–387.193	–71.059	–154.754	6.218
	1400.00	37.988	302.380	272.961	6.041	41.187	–417.292	–199.387	–157.513	5.877
	1500.00	38.053	305.003	275.011	9.843	44.989	–447.662	–199.562	–154.516	5.381
	1600.00	38.116	307.461	276.963	13.651	48.797	–478.287	–199.733	–151.507	4.946
	1700.00	38.177	309.774	278.826	17.466	52.612	–509.150	–199.901	–148.488	4.562
	1800.00	38.238	311.958	280.606	21.287	56.433	–540.237	–200.065	–145.459	4.221
	1900.00	38.297	314.027	282.311	25.113	60.259	–571.537	–200.226	–142.421	3.915
	2000.00	38.355	315.993	283.947	28.946	64.092	–603.039	–200.384	–139.374	3.640

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [————— kJ / mol —————]	H–H298	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _r [–]
SOL	298.15	73.164	117.152	117.152	–524.255	0.000	–559.184	–524.255	–504.060	88.309
	300.00	73.250	117.605	117.153	–524.120	0.135	–559.401	–524.306	–503.934	87.743
	400.00	77.280	139.269	120.080	–516.579	7.676	–572.287	–553.798	–491.003	64.118
	500.00	79.740	156.800	125.727	–508.718	15.537	–587.118	–552.298	–475.475	49.673
	600.00	81.436	171.495	132.163	–500.656	23.599	–603.553	–550.741	–460.256	40.069
	700.00	82.961	184.162	138.707	–492.436	31.819	–621.350	–549.161	–445.300	33.229
	800.00	84.557	195.343	145.101	–484.061	40.194	–640.336	–547.556	–430.572	28.113
	900.00	86.267	205.400	151.252	–475.521	48.734	–660.381	–545.913	–416.047	24.147
	984.00	87.744	213.163	156.209	–468.213	56.042	–677.965	–553.451	–403.388	21.413
LIQ			39.970		39.330					
	984.00	104.600	253.133	156.209	–428.883	95.372	–677.965	–514.121	–403.388	21.413
	1000.00	104.600	254.820	157.774	–427.209	97.046	–682.029	–513.573	–401.592	20.977
	1100.00	104.600	264.789	167.056	–416.749	107.506	–708.017	–510.149	–390.560	18.546
	1200.00	104.600	273.891	175.585	–406.289	117.966	–734.958	–506.732	–379.839	16.534
	1300.00	104.600	282.263	183.474	–395.829	128.426	–762.771	–503.322	–369.403	14.843
	1400.00	104.600	290.015	190.810	–385.369	138.886	–791.389	–626.880	–355.600	13.268
	1429.00	104.600	292.159	192.845	–382.336	141.919	–799.831	–625.550	–349.995	12.793

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 BPT= 1429., L= 149.0 kJ, GAS (MgBr2)

MgBr2[g]

MAGNESIUM BROMIDE (GAS)

184.113

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
GAS	298.15	58.710	300.939	300.939	–302.922	0.000	–392.647	–302.922	–337.523	59.133
	300.00	58.746	301.302	300.940	–302.813	0.109	–393.204	–302.999	–337.737	58.805
	400.00	60.137	318.416	303.264	–296.861	6.061	–424.228	–334.080	–342.943	44.784
	500.00	60.869	331.922	307.692	–290.807	12.115	–456.768	–334.388	–345.125	36.055
	600.00	61.296	343.061	312.686	–284.697	18.225	–490.534	–334.783	–347.237	30.230
	700.00	61.565	352.531	317.719	–278.553	24.369	–525.325	–335.278	–349.275	26.063
	800.00	61.745	360.764	322.596	–272.387	30.535	–560.999	–335.882	–351.235	22.933
	900.00	61.871	368.045	327.249	–266.206	36.716	–597.446	–336.598	–353.112	20.494
	1000.00	61.962	374.568	331.661	–260.014	42.908	–634.583	–346.378	–354.146	18.499
	1100.00	62.030	380.477	335.834	–253.814	49.108	–672.339	–347.215	–354.882	16.852
	1200.00	62.082	385.877	339.783	–247.609	55.313	–710.661	–348.052	–355.542	15.476
	1300.00	62.123	390.848	343.522	–241.398	61.524	–749.501	–348.891	–356.132	14.310
	1400.00	62.155	395.453	347.069	–235.184	67.738	–788.818	–476.696	–353.029	13.172
	1500.00	62.181	399.742	350.439	–228.968	73.954	–828.581	–476.355	–344.208	11.986
	1600.00	62.202	403.756	353.647	–222.748	80.174	–868.758	–476.017	–335.409	10.950
	1700.00	62.219	407.527	356.707	–216.527	86.395	–909.324	–475.682	–326.631	10.036
	1800.00	62.233	411.084	359.630	–210.305	92.617	–950.256	–475.351	–317.873	9.224
	1900.00	62.245	414.449	362.427	–204.081	98.841	–991.534	–475.024	–309.134	8.499
	2000.00	62.254	417.642	365.109	–197.856	105.066	–1033.140	–474.700	–300.411	7.846

References

Phase	H / S	C _p
GAS	Ja1	Ja1

368.226

DIMAGNESIUM TETRABROMIDE (GAS)

Mg2Br4[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—————]
GAS	298.15	129.004	461.186	461.186	–767.764	0.000	–905.267	–767.764	–795.019	139.284
	300.00	129.053	461.984	461.189	–767.525	0.239	–906.121	–767.897	–795.187	138.454
	400.00	130.778	499.382	466.276	–754.521	13.243	–954.274	–828.960	–791.706	103.386
	500.00	131.578	528.661	475.931	–741.399	26.365	–1005.729	–828.560	–782.443	81.741
	600.00	132.014	552.692	486.782	–728.218	39.546	–1059.833	–828.388	–773.240	67.317
	700.00	132.277	573.064	497.689	–715.002	52.762	–1116.147	–828.452	–764.047	57.014
	800.00	132.449	590.739	508.240	–701.765	65.999	–1174.356	–828.755	–754.828	49.285
	900.00	132.568	606.346	518.291	–688.514	79.250	–1234.226	–829.298	–745.558	43.271
	1000.00	132.653	620.318	527.807	–675.253	92.511	–1295.571	–847.981	–734.698	38.377
	1100.00	132.717	632.965	536.801	–661.984	105.780	–1358.245	–848.785	–723.330	34.348
	1200.00	132.766	644.515	545.303	–648.710	119.054	–1422.127	–849.597	–711.890	30.988
	1300.00	132.805	655.143	553.349	–635.431	132.333	–1487.117	–850.416	–700.381	28.142
	1400.00	132.836	664.986	560.976	–622.149	145.615	–1553.130	–1105.172	–681.552	25.429
	1500.00	132.862	674.152	568.219	–608.864	158.900	–1620.092	–1103.638	–651.347	22.682
	1600.00	132.883	682.727	575.110	–595.577	172.187	–1687.941	–1102.113	–621.244	20.282
	1700.00	132.902	690.784	581.680	–582.287	185.477	–1756.620	–1100.596	–591.236	18.166
	1800.00	132.917	698.381	587.955	–568.996	198.768	–1826.082	–1099.089	–561.317	16.289
	1900.00	132.931	705.568	593.957	–555.704	212.060	–1896.283	–1097.589	–531.482	14.611
	2000.00	132.943	712.387	599.710	–542.410	225.354	–1967.183	–1096.099	–501.725	13.104

References

Phase	H / S	C _p
GAS	Ja1	Ja1

MgC2

MAGNESIUM DICARBIDE

48.327

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	56.235	54.392	54.392	87.864	0.000	71.647	87.864	84.813	-14.859
	300.00	56.455	54.741	54.393	87.968	0.104	71.546	87.891	84.794	-14.764
	400.00	64.401	72.220	56.722	94.063	6.199	65.175	89.360	83.540	-10.909
	500.00	68.425	87.065	61.347	100.723	12.859	57.191	90.689	81.926	-8.559
	600.00	70.905	99.775	66.718	107.698	19.834	47.833	91.717	80.071	-6.971
	700.00	72.657	110.843	72.248	114.881	27.017	37.290	92.439	78.069	-5.826
	800.00	74.019	120.637	77.697	122.217	34.353	25.707	92.905	75.982	-4.961
	900.00	75.156	129.423	82.964	129.677	41.813	13.196	93.159	73.850	-4.286
	1000.00	76.153	137.394	88.015	137.243	49.379	-0.151	84.281	72.456	-3.785
	1100.00	77.058	144.695	92.840	144.905	57.041	-14.260	84.301	71.273	-3.384
	1200.00	77.901	151.437	97.446	152.653	64.789	-29.071	84.294	70.088	-3.051
	1300.00	78.699	157.704	101.843	160.483	72.619	-44.532	84.278	68.905	-2.769
	1400.00	79.466	163.564	106.045	168.392	80.528	-60.598	-42.699	71.352	-2.662
	1500.00	80.209	169.072	110.065	176.376	88.512	-77.233	-41.512	79.457	-2.767
	1600.00	80.934	174.272	113.917	184.433	96.569	-94.403	-40.302	87.482	-2.856
	1700.00	81.646	179.200	117.613	192.562	104.698	-112.078	-39.059	95.431	-2.932
	1800.00	82.346	183.887	121.166	200.762	112.898	-130.235	-37.779	103.305	-2.998
	1900.00	83.038	188.358	124.586	209.031	121.167	-148.849	-36.457	111.108	-3.055
	2000.00	83.723	192.634	127.882	217.369	129.505	-167.900	-35.092	118.839	-3.104
	2100.00	84.402	196.736	131.064	225.775	137.911	-187.370	-33.683	126.501	-3.147
	2200.00	85.077	200.678	134.139	234.249	146.385	-207.241	-32.227	134.095	-3.184
	2300.00	85.747	204.474	137.115	242.791	154.927	-227.500	-30.723	141.622	-3.216
	2400.00	86.415	208.138	139.998	251.399	163.535	-248.132	-29.169	149.082	-3.245
	2500.00	87.080	211.679	142.795	260.073	172.209	-269.124	-27.564	156.476	-3.269

References

Phase	H / S	C _p
SOL	A1	A1

84.643

DIMAGNESIUM TRICARBIDE

Mg₂C₃

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
kJ / mol										
SOL	298.15	93.789	100.416	100.416	79.496	0.000	49.557	79.496	74.177	–12.995
	300.00	94.155	100.997	100.418	79.670	0.174	49.371	79.530	74.144	–12.910
	400.00	107.389	130.147	104.302	89.834	10.338	37.775	81.481	72.057	–9.410
	500.00	114.089	154.900	112.014	100.939	21.443	23.489	83.255	69.487	–7.259
	600.00	118.218	176.091	120.970	112.568	33.072	6.914	84.570	66.602	–5.798
	700.00	121.133	194.544	130.191	124.543	45.047	–11.638	85.402	63.535	–4.741
	800.00	123.401	210.873	139.276	136.774	57.278	–31.925	85.816	60.378	–3.942
	900.00	125.293	225.520	148.059	149.211	69.715	–53.757	85.875	57.192	–3.319
	1000.00	126.951	238.808	156.479	161.825	82.329	–76.983	67.719	55.531	–2.901
	1100.00	128.456	250.979	164.525	174.596	95.100	–101.481	67.396	54.328	–2.580
	1200.00	129.858	262.217	172.203	187.512	108.016	–127.148	67.049	53.155	–2.314
	1300.00	131.186	272.664	179.534	200.565	121.069	–153.898	66.699	52.012	–2.090
	1400.00	132.461	282.433	186.539	213.748	134.252	–181.658	–187.559	58.151	–2.170
	1500.00	133.696	291.614	193.241	227.056	147.560	–210.365	–185.487	75.630	–2.634
	1600.00	134.902	300.281	199.662	240.486	160.990	–239.964	–183.366	92.969	–3.035
	1700.00	136.085	308.495	205.825	254.036	174.540	–270.406	–181.185	110.173	–3.385
	1800.00	137.250	316.307	211.748	267.703	188.207	–301.650	–178.937	127.248	–3.693
	1900.00	138.400	323.758	217.448	281.485	201.989	–333.656	–176.615	144.195	–3.964
	2000.00	139.538	330.886	222.943	295.382	215.886	–366.391	–174.217	161.018	–4.205
	2100.00	140.668	337.722	228.247	309.392	229.896	–399.823	–171.742	177.719	–4.421
	2200.00	141.789	344.292	233.374	323.515	244.019	–433.926	–169.186	194.301	–4.613
	2300.00	142.904	350.619	238.335	337.750	258.254	–468.673	–166.546	210.764	–4.787
	2400.00	144.014	356.724	243.141	352.096	272.600	–504.042	–163.820	227.111	–4.943
	2500.00	145.119	362.626	247.803	366.553	287.057	–540.012	–161.008	243.342	–5.084

References

Phase	H / S	C _p
SOL	Ja1	A1

84.314

MAGNESIUM CARBONATE

MgCO₃

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
kJ / mol										
SOL	298.15	75.520	65.701	65.701	–1095.798	0.000	–1115.387	–1095.798	–1012.186	177.331
	300.00	75.868	66.170	65.703	–1095.658	0.140	–1115.509	–1095.801	–1011.667	176.147
	400.00	90.102	90.119	68.872	–1087.299	8.499	–1123.347	–1095.487	–983.646	128.451
	500.00	99.793	111.315	75.284	–1077.783	18.015	–1133.440	–1094.559	–955.784	99.850
	600.00	107.694	130.225	82.893	–1067.399	28.399	–1145.534	–1093.281	–928.144	80.802
	700.00	114.750	147.364	90.897	–1056.271	39.527	–1159.426	–1091.719	–900.741	67.214

References

Phase	H / S	C _p
SOL	Nb1	Ku1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	34.777	233.409	233.409	–43.514	0.000	–113.105	–43.514	–70.101	12.281
	300.00	34.811	233.625	233.410	–43.450	0.064	–113.537	–43.527	–70.266	12.234
	400.00	36.013	243.827	234.793	–39.900	3.614	–137.431	–44.262	–79.070	10.325
	500.00	36.597	251.933	237.438	–36.267	7.247	–162.233	–45.083	–87.679	9.160
	600.00	36.939	258.638	240.429	–32.589	10.925	–187.771	–46.009	–96.113	8.367
	700.00	37.166	264.350	243.448	–28.883	14.631	–213.928	–47.046	–104.383	7.789
	800.00	37.332	269.324	246.379	–25.157	18.357	–240.617	–48.196	–112.497	7.345
	900.00	37.462	273.729	249.177	–21.418	22.096	–267.774	–49.459	–120.460	6.991
	1000.00	37.570	277.682	251.834	–17.666	25.848	–295.348	–59.784	–127.519	6.661
	1100.00	37.664	281.267	254.349	–13.904	29.610	–323.298	–61.162	–134.226	6.374
	1200.00	37.748	284.548	256.731	–10.133	33.381	–351.591	–62.537	–140.807	6.129
	1300.00	37.825	287.573	258.988	–6.355	37.159	–380.199	–63.908	–147.274	5.918
	1400.00	37.897	290.378	261.132	–2.568	40.946	–409.098	–192.240	–150.007	5.597
	1500.00	37.965	292.995	263.170	1.225	44.739	–438.268	–192.420	–146.984	5.118
	1600.00	38.031	295.448	265.111	5.024	48.538	–467.692	–192.597	–143.949	4.699
	1700.00	38.094	297.755	266.964	8.831	52.345	–497.353	–192.771	–140.903	4.329
	1800.00	38.155	299.934	268.736	12.643	56.157	–527.238	–192.942	–137.847	4.000
	1900.00	38.216	301.999	270.433	16.462	59.976	–557.336	–193.111	–134.782	3.705
	2000.00	38.275	303.961	272.060	20.286	63.800	–587.635	–193.277	–131.707	3.440
	2100.00	38.333	305.829	273.624	24.117	67.631	–618.125	–193.442	–128.625	3.199
	2200.00	38.390	307.614	275.129	27.953	71.467	–648.798	–193.604	–125.534	2.981
	2300.00	38.447	309.322	276.579	31.795	75.309	–679.645	–193.765	–122.437	2.781
	2400.00	38.504	310.959	277.977	35.642	79.156	–710.660	–193.925	–119.332	2.597
	2500.00	38.560	312.532	279.328	39.495	83.009	–741.835	–194.083	–116.221	2.428
	2600.00	38.615	314.046	280.635	43.354	86.868	–773.164	–194.240	–113.103	2.272
	2700.00	38.670	315.504	281.899	47.218	90.732	–804.642	–194.396	–109.980	2.128
	2800.00	38.725	316.911	283.125	51.088	94.602	–836.263	–194.552	–106.850	1.993
	2900.00	38.780	318.271	284.313	54.964	98.478	–868.023	–194.707	–103.715	1.868
	3000.00	38.835	319.587	285.467	58.844	102.358	–899.916	–194.862	–100.575	1.751

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [–]
SOL	298.15	71.383	89.630	89.630	–641.616	0.000	–668.339	–641.616	–592.074	103.729
	300.00	71.493	90.071	89.631	–641.484	0.132	–668.505	–641.593	–591.767	103.036
	400.00	75.709	111.283	92.494	–634.100	7.516	–678.614	–640.228	–575.359	75.134
	500.00	78.148	128.459	98.025	–626.399	15.217	–690.628	–638.766	–559.310	58.431
	600.00	79.865	142.866	104.330	–618.494	23.122	–704.214	–637.283	–543.559	47.321
	700.00	81.262	155.284	110.742	–610.436	31.180	–719.135	–635.806	–528.055	39.404
	800.00	82.545	166.220	117.007	–602.246	39.370	–735.221	–634.343	–512.762	33.480
	900.00	83.849	176.017	123.028	–593.927	47.689	–752.342	–632.890	–497.651	28.883
	987.00	85.079	183.809	128.047	–586.579	55.037	–767.998	–640.578	–484.006	25.615
LIQ			43.663		43.095					
	987.00	92.048	227.471	128.047	–543.484	98.132	–767.998	–597.483	–484.006	25.615
	1000.00	92.048	228.676	129.347	–542.288	99.328	–770.963	–597.198	–482.513	25.204
	1100.00	92.048	237.449	138.782	–533.083	108.533	–794.276	–595.010	–471.151	22.373
	1200.00	92.048	245.458	147.343	–523.878	117.738	–818.428	–592.833	–459.987	20.023
	1300.00	92.048	252.826	155.177	–514.673	126.943	–843.347	–590.665	–449.004	18.041
	1400.00	92.048	259.647	162.399	–505.468	136.148	–868.975	–715.468	–434.560	16.214
	1500.00	92.048	265.998	169.096	–496.264	145.352	–895.261	–712.131	–414.612	14.438
	1600.00	92.048	271.939	175.340	–487.059	154.557	–922.161	–708.801	–394.886	12.892
	1700.00	92.048	277.519	181.188	–477.854	163.762	–949.636	–705.478	–375.368	11.534
	1708.00	92.048	277.951	181.641	–477.118	164.498	–951.858	–705.212	–373.815	11.432

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 BPT= 1708., L= 156.2 kJ

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
GAS	298.15	57.098	279.768	279.768	-392.459	0.000	-475.872	-392.459	-399.607	70.009
	300.00	57.147	280.121	279.769	-392.353	0.106	-476.390	-392.462	-399.651	69.585
	400.00	59.063	296.853	282.037	-386.533	5.926	-505.274	-392.660	-402.019	52.498
	500.00	60.119	310.157	286.376	-380.569	11.890	-535.647	-392.936	-404.329	42.240
	600.00	60.748	321.178	291.284	-374.523	17.936	-567.230	-393.312	-406.574	35.395
	700.00	61.150	330.574	296.243	-368.427	24.032	-599.829	-393.797	-408.748	30.501
	800.00	61.421	338.759	301.057	-362.297	30.162	-633.304	-394.395	-410.845	26.825
	900.00	61.612	346.005	305.656	-356.145	36.314	-667.549	-395.108	-412.859	23.962
	1000.00	61.751	352.504	310.021	-349.977	42.482	-702.480	-404.887	-414.030	21.627
	1100.00	61.855	358.394	314.155	-343.796	48.663	-738.030	-405.724	-414.904	19.702
	1200.00	61.935	363.780	318.070	-337.606	54.853	-774.142	-406.562	-415.702	18.095
	1300.00	61.997	368.740	321.779	-331.410	61.049	-810.772	-407.401	-416.429	16.732
	1400.00	62.046	373.336	325.300	-325.207	67.252	-847.878	-535.207	-413.464	15.427
	1500.00	62.086	377.618	328.646	-319.001	73.458	-885.428	-534.868	-404.780	14.096
	1600.00	62.118	381.626	331.834	-312.791	79.668	-923.393	-534.532	-396.118	12.932
	1700.00	62.145	385.393	334.875	-306.577	85.882	-961.746	-534.201	-387.477	11.906
	1800.00	62.167	388.946	337.781	-300.362	92.097	-1000.464	-533.874	-378.856	10.994
	1900.00	62.185	392.308	340.563	-294.144	98.315	-1039.529	-533.553	-370.253	10.179
	2000.00	62.200	395.498	343.231	-287.925	104.534	-1078.920	-533.237	-361.666	9.446

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _r [– –]
GAS	298.15	32.417	221.083	221.083	–236.814	0.000	–302.730	–236.814	–262.756	46.034
	300.00	32.472	221.284	221.084	–236.754	0.060	–303.139	–236.829	–262.917	45.778
	400.00	34.447	230.935	222.386	–233.394	3.420	–325.769	–237.627	–271.492	35.453
	500.00	35.407	238.736	224.902	–229.897	6.917	–349.265	–238.480	–279.861	29.237
	600.00	35.967	245.245	227.765	–226.326	10.488	–373.473	–239.433	–288.050	25.077
	700.00	36.338	250.818	230.669	–222.710	14.104	–398.283	–240.496	–296.070	22.093
	800.00	36.608	255.689	233.499	–219.062	17.752	–423.613	–241.673	–303.931	19.845
	900.00	36.820	260.014	236.209	–215.390	21.424	–449.402	–242.965	–311.637	18.087
	1000.00	36.995	263.902	238.787	–211.699	25.115	–475.601	–253.321	–318.435	16.633
	1100.00	37.147	267.436	241.234	–207.992	28.822	–502.171	–254.730	–324.878	15.427
	1200.00	37.282	270.674	243.554	–204.270	32.544	–529.079	–256.136	–331.193	14.416
	1300.00	37.406	273.663	245.756	–200.536	36.278	–556.297	–257.539	–337.390	13.557
	1400.00	37.522	276.439	247.850	–196.789	40.025	–583.804	–385.901	–339.852	12.680
	1500.00	37.632	279.032	249.843	–193.032	43.782	–611.579	–386.110	–336.555	11.720
	1600.00	37.737	281.464	251.744	–189.263	47.551	–639.605	–386.315	–333.245	10.879
	1700.00	37.838	283.754	253.561	–185.484	51.330	–667.867	–386.516	–329.922	10.137
	1800.00	37.937	285.920	255.299	–181.696	55.118	–696.352	–386.712	–326.587	9.477
	1900.00	38.033	287.974	256.965	–177.897	58.917	–725.047	–386.903	–323.242	8.887
	2000.00	38.128	289.927	258.565	–174.089	62.725	–753.943	–387.090	–319.886	8.355
	2100.00	38.221	291.790	260.103	–170.272	66.542	–783.030	–387.272	–316.522	7.873
	2200.00	38.313	293.570	261.584	–166.445	70.369	–812.298	–387.449	–313.148	7.435
	2300.00	38.404	295.275	263.012	–162.609	74.205	–841.741	–387.622	–309.767	7.035
	2400.00	38.494	296.911	264.390	–158.764	78.050	–871.351	–387.789	–306.379	6.668
	2500.00	38.583	298.484	265.723	–154.910	81.904	–901.121	–387.952	–302.983	6.330
	2600.00	38.672	299.999	267.012	–151.048	85.766	–931.046	–388.109	–299.581	6.019
	2700.00	38.760	301.461	268.261	–147.176	89.638	–961.119	–388.262	–296.173	5.730
	2800.00	38.848	302.872	269.472	–143.296	93.518	–991.336	–388.409	–292.760	5.462
	2900.00	38.936	304.236	270.648	–139.406	97.408	–1021.692	–388.552	–289.341	5.212
	3000.00	39.023	305.558	271.789	–135.508	101.306	–1052.182	–388.689	–285.918	4.978

References

Phase	H / S	C _p
GAS	Ja1	Ja1

MgF2

MAGNESIUM FLUORIDE

62.302

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	61.538	57.255	57.255	-1124.241	0.000	-1141.312	-1124.241	-1071.106	187.653
	300.00	61.697	57.636	57.256	-1124.127	0.114	-1141.418	-1124.231	-1070.776	186.439
	400.00	68.484	76.395	59.768	-1117.590	6.651	-1148.148	-1123.459	-1053.063	137.516
	500.00	72.635	92.159	64.713	-1110.518	13.723	-1156.597	-1122.419	-1035.581	108.186
	600.00	75.318	105.655	70.439	-1103.111	21.130	-1166.505	-1121.272	-1018.320	88.653
	700.00	77.179	117.413	76.328	-1095.481	28.760	-1177.671	-1120.096	-1001.255	74.715
	800.00	78.554	127.813	82.126	-1087.691	36.550	-1189.942	-1118.935	-984.357	64.272
	900.00	79.625	137.130	87.729	-1079.781	44.460	-1203.197	-1117.811	-967.602	56.158
	1000.00	80.497	145.566	93.098	-1071.773	52.468	-1217.339	-1125.690	-950.213	49.634
	1100.00	81.235	153.273	98.223	-1063.685	60.556	-1232.286	-1124.573	-932.719	44.291
	1200.00	81.879	160.370	103.110	-1055.529	68.712	-1247.973	-1123.408	-915.328	39.843
	1300.00	82.454	166.947	107.771	-1047.312	76.929	-1264.343	-1122.201	-898.037	36.084
	1400.00	82.978	173.077	112.219	-1039.040	85.201	-1281.347	-1247.919	-877.212	32.729
	1500.00	83.465	178.818	116.470	-1030.718	93.523	-1298.945	-1245.452	-850.818	29.628
	1536.00	83.632	180.800	117.954	-1027.710	96.531	-1305.419	-1244.556	-841.358	28.612
LIQ			38.217		58.702					
	1536.00	94.922	219.017	117.954	-969.008	155.233	-1305.419	-1185.854	-841.358	28.612
	1600.00	94.922	222.892	122.075	-962.933	161.308	-1319.560	-1183.536	-827.051	27.000
	1700.00	94.922	228.647	128.176	-953.441	170.800	-1342.140	-1179.924	-804.882	24.731
	1800.00	94.922	234.073	133.910	-943.948	180.293	-1365.279	-1176.323	-782.924	22.720
	1900.00	94.922	239.205	139.318	-934.456	189.785	-1388.945	-1172.732	-761.167	20.926
	2000.00	94.922	244.074	144.435	-924.964	199.277	-1413.111	-1169.151	-739.598	19.316
	2100.00	94.922	248.705	149.291	-915.472	208.769	-1437.752	-1165.579	-718.209	17.864
	2200.00	94.922	253.121	153.911	-905.979	218.262	-1462.845	-1162.016	-696.989	16.549
	2300.00	94.922	257.340	158.317	-896.487	227.754	-1488.369	-1158.462	-675.931	15.351
	2400.00	94.922	261.380	162.527	-886.995	237.246	-1514.307	-1154.916	-655.027	14.256
	2500.00	94.922	265.255	166.560	-877.503	246.738	-1540.640	-1151.377	-634.271	13.252
	2600.00	94.922	268.978	170.428	-868.010	256.231	-1567.353	-1147.847	-613.657	12.329

References

Phase	H / S	C _p	Remarks
SOL	Ja2	Ja1	
LIQ	Ja2	Ja1	Ja2 BPT= 2536., L= 274.052 kJ

Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
GAS	298.15	48.284	256.508	256.508	–726.761	0.000	–803.239	–726.761	–733.033	128.424
	300.00	48.353	256.807	256.509	–726.672	0.089	–803.714	–726.776	–733.072	127.639
	400.00	51.407	271.166	258.446	–721.673	5.088	–830.139	–727.542	–735.054	95.988
	500.00	53.344	282.862	262.196	–716.428	10.333	–857.859	–728.329	–736.843	76.977
	600.00	54.595	292.706	266.482	–711.027	15.734	–886.650	–729.187	–738.466	64.289
	700.00	55.449	301.190	270.849	–705.522	21.239	–916.355	–730.137	–739.939	55.215
	800.00	56.062	308.636	275.116	–699.945	26.816	–946.854	–731.188	–741.269	48.400
	900.00	56.423	315.260	279.215	–694.321	32.440	–978.055	–732.352	–742.460	43.091
	1000.00	56.782	321.224	283.123	–688.660	38.101	–1009.884	–742.578	–742.758	38.798
	1100.00	57.142	326.653	286.837	–682.964	43.797	–1042.282	–743.852	–742.714	35.269
	1200.00	57.215	331.627	290.365	–677.247	49.514	–1075.199	–745.126	–742.555	32.323
	1300.00	57.317	336.211	293.718	–671.520	55.241	–1108.594	–746.409	–742.288	29.826
	1400.00	57.422	340.462	296.907	–665.783	60.978	–1142.430	–874.662	–738.295	27.546
	1500.00	57.519	344.427	299.944	–660.036	66.725	–1176.677	–874.771	–728.550	25.370
	1600.00	57.604	348.142	302.842	–654.280	72.481	–1211.308	–874.883	–718.799	23.466
	1700.00	57.676	351.637	305.610	–648.516	78.245	–1246.298	–874.999	–709.040	21.786
	1800.00	57.736	354.935	308.260	–642.745	84.016	–1281.628	–875.120	–699.274	20.292
	1900.00	57.786	358.058	310.799	–636.969	89.792	–1317.280	–875.245	–689.501	18.956
	2000.00	57.826	361.023	313.237	–631.188	95.573	–1353.235	–875.376	–679.722	17.753
	2100.00	57.859	363.845	315.580	–625.404	101.357	–1389.479	–875.512	–669.936	16.664
	2200.00	57.887	366.538	317.836	–619.617	107.144	–1426.000	–875.653	–660.143	15.674
	2300.00	57.909	369.111	320.010	–613.827	112.934	–1462.783	–875.801	–650.344	14.770
	2400.00	57.929	371.576	322.107	–608.035	118.726	–1499.818	–875.955	–640.539	13.941
	2500.00	57.947	373.942	324.134	–602.241	124.520	–1537.095	–876.116	–630.726	13.178
	2600.00	57.964	376.215	326.093	–596.445	130.316	–1574.604	–876.282	–620.907	12.474
	2700.00	57.980	378.403	327.990	–590.648	136.113	–1612.335	–876.455	–611.082	11.822
	2800.00	57.998	380.511	329.829	–584.849	141.912	–1650.281	–876.633	–601.250	11.216
	2900.00	58.016	382.547	331.612	–579.049	147.712	–1688.435	–876.817	–591.412	10.652
	3000.00	58.037	384.514	333.343	–573.246	153.515	–1726.789	–877.006	–581.567	10.126

References

Phase	H / S	C _p
GAS	Ja2	Ja1

Mg2F4[g]

DIMAGNESIUM TETRAFLUORIDE (GAS)

124.604

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	107.497	337.014	337.014	-1718.369	0.000	-1818.850	-1718.369	-1678.438	294.055
	300.00	107.732	337.680	337.016	-1718.170	0.199	-1819.474	-1718.378	-1678.190	292.199
	400.00	117.036	370.087	341.371	-1706.883	11.486	-1854.918	-1718.620	-1664.747	217.394
	500.00	122.153	396.805	349.867	-1694.900	23.469	-1893.302	-1718.701	-1651.270	172.507
	600.00	125.202	419.368	359.619	-1682.520	35.849	-1934.141	-1718.841	-1637.772	142.581
	700.00	127.150	438.825	369.577	-1669.895	48.474	-1977.073	-1719.126	-1624.240	121.202
	800.00	128.464	455.894	379.321	-1657.111	61.258	-2021.826	-1719.597	-1610.656	105.165
	900.00	129.389	471.082	388.689	-1644.215	74.154	-2068.189	-1720.277	-1596.999	92.687
	1000.00	130.064	484.751	397.623	-1631.241	87.128	-2115.992	-1739.076	-1581.740	82.622
	1100.00	130.570	497.172	406.117	-1618.208	100.161	-2165.098	-1739.983	-1565.962	74.361
	1200.00	130.957	508.551	414.186	-1605.131	113.238	-2215.392	-1740.889	-1550.102	67.474
	1300.00	131.261	519.045	421.853	-1592.020	126.349	-2266.778	-1741.798	-1534.167	61.644
	1400.00	131.502	528.782	429.148	-1578.881	139.488	-2319.176	-1996.639	-1510.904	56.373
	1500.00	131.696	537.861	436.096	-1565.721	152.648	-2372.513	-1995.190	-1476.259	51.408
	1600.00	131.854	546.366	442.725	-1552.543	165.826	-2426.729	-1993.750	-1441.711	47.067
	1700.00	131.984	554.364	449.059	-1539.351	179.018	-2481.769	-1992.318	-1407.252	43.240
	1800.00	132.092	561.911	455.121	-1526.147	192.222	-2537.586	-1990.896	-1372.877	39.840
	1900.00	132.182	569.055	460.931	-1512.933	205.436	-2594.138	-1989.485	-1338.582	36.800
	2000.00	132.258	575.837	466.508	-1499.711	218.658	-2651.385	-1988.086	-1304.360	34.066

References

Phase	H / S	C _p
GAS	Ja2	Ja1

MgH2

MAGNESIUM HYDRIDE

26.321

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	35.327	31.087	31.087	-76.149	0.000	-85.418	-76.149	-36.713	6.432
	300.00	35.499	31.306	31.088	-76.083	0.066	-85.475	-76.183	-36.468	6.350
	400.00	43.283	42.643	32.581	-72.124	4.025	-89.181	-77.680	-22.987	3.002
	500.00	49.539	52.990	35.643	-67.476	8.673	-93.971	-78.624	-9.194	0.960
	600.00	55.192	62.528	39.339	-62.236	13.913	-99.752	-79.099	4.744	-0.413

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 NDPT= 560.

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
GAS	298.15	36.606	272.237	272.237	24.686	0.000	–56.481	24.686	–29.425	5.155
	300.00	36.627	272.463	272.237	24.754	0.068	–56.985	24.657	–29.761	5.182
	400.00	37.431	283.123	273.685	28.461	3.775	–84.788	14.994	–47.378	6.187
	500.00	37.915	291.530	276.443	32.230	7.544	–113.536	–8.003	–60.733	6.345
	600.00	38.273	298.476	279.553	36.040	11.354	–143.046	–8.855	–71.201	6.199
	700.00	38.571	304.399	282.690	39.882	15.196	–173.197	–9.798	–81.519	6.083
	800.00	38.837	309.567	285.733	43.753	19.067	–203.901	–10.836	–91.695	5.987
	900.00	39.085	314.156	288.641	47.649	22.963	–235.091	–11.970	–101.735	5.905
	1000.00	39.322	318.286	291.402	51.570	26.884	–266.716	–22.149	–110.886	5.792
	1100.00	39.551	322.045	294.020	55.513	30.827	–298.736	–23.367	–119.700	5.684
	1200.00	39.775	325.496	296.501	59.480	34.794	–331.115	–24.564	–128.405	5.589
	1300.00	39.995	328.688	298.856	63.468	38.782	–363.826	–25.743	–137.011	5.505
	1400.00	40.213	331.660	301.094	67.479	42.793	–396.845	–153.867	–141.897	5.294
	1500.00	40.429	334.442	303.225	71.511	46.825	–430.152	–153.823	–141.044	4.912
	1600.00	40.643	337.058	305.259	75.564	50.878	–463.728	–153.761	–140.194	4.577
	1700.00	40.856	339.528	307.203	79.639	54.953	–497.559	–153.681	–139.348	4.282
	1800.00	41.069	341.870	309.064	83.736	59.050	–531.630	–153.582	–138.508	4.019
	1900.00	41.280	344.096	310.850	87.853	63.167	–565.929	–153.466	–137.673	3.785
	2000.00	41.491	346.218	312.566	91.992	67.306	–600.445	–153.331	–136.846	3.574

References

Phase	H / S	C _p
GAS	Ja1	Ja1

MgI2

MAGNESIUM IODIDE

278.114

Phase	T [K]	C _p [———]	S — J / (K mol) —	—(G–H298)/T [———]	H [———]	H–H298 [———]	G kJ / mol	ΔH _f [———]	ΔG _f [———]	log K _f [—]
SOL	298.15	74.849	129.704	129.704	–366.937	0.000	–405.608	–366.937	–361.238	63.287
	300.00	74.936	130.167	129.705	–366.798	0.139	–405.849	–366.945	–361.202	62.891
	400.00	78.413	152.244	132.692	–359.116	7.821	–420.014	–383.453	–358.660	46.836
	500.00	80.918	170.020	138.437	–351.145	15.792	–436.155	–426.345	–348.341	36.391
	600.00	83.015	184.966	144.979	–342.944	23.993	–453.924	–424.681	–332.895	28.981
	700.00	84.737	197.896	151.635	–334.555	32.382	–473.082	–422.959	–317.733	23.710
	800.00	86.260	209.312	158.145	–326.004	40.933	–493.453	–421.202	–302.821	19.772
	900.00	87.666	219.554	164.409	–317.306	49.631	–514.905	–419.425	–288.130	16.723
	907.00	87.761	220.234	164.837	–316.693	50.244	–516.444	–419.300	–287.109	16.535
LIQ			32.291		29.288					
	907.00	100.416	252.525	164.837	–287.405	79.532	–516.444	–390.012	–287.109	16.535
	1000.00	100.416	262.327	173.455	–278.066	88.871	–540.392	–396.178	–275.939	14.414
	1100.00	100.416	271.897	181.977	–268.024	98.913	–567.111	–393.195	–264.059	12.539
	1200.00	100.416	280.635	189.839	–257.983	108.954	–594.744	–390.218	–252.451	10.989

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja2 BPT= 1254., L= 151.151 kJ

278.114MAGNESIUM IODIDE (GAS)MgI2[g]										
Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
GAS	298.15	59.622	317.466	317.466	–160.247	0.000	–254.899	–160.247	–210.529	36.884
	300.00	59.650	317.835	317.467	–160.137	0.110	–255.487	–160.284	–210.841	36.711
	400.00	60.722	335.161	319.822	–154.112	6.135	–288.176	–178.448	–226.822	29.620
	500.00	61.270	348.775	324.300	–148.009	12.238	–322.397	–223.208	–234.583	24.507
	600.00	61.586	359.976	329.340	–141.865	18.382	–357.851	–223.602	–236.822	20.617
	700.00	61.783	369.486	334.413	–135.696	24.551	–394.336	–224.100	–238.988	17.833
	800.00	61.914	377.745	339.324	–129.511	30.736	–431.707	–224.709	–241.074	15.741
	900.00	62.006	385.043	344.007	–123.314	36.933	–469.853	–225.433	–243.078	14.108
	1000.00	62.072	391.580	348.443	–117.110	43.137	–508.690	–235.223	–244.236	12.758
	1100.00	62.122	397.498	352.638	–110.900	49.347	–548.148	–236.071	–245.097	11.639
	1200.00	62.159	402.905	356.605	–104.686	55.561	–588.172	–236.922	–245.880	10.703
	1300.00	62.189	407.882	360.360	–98.469	61.778	–628.715	–237.776	–246.592	9.908
	1400.00	62.212	412.491	363.921	–92.249	67.998	–669.737	–365.597	–243.609	9.089
	1500.00	62.231	416.784	367.304	–86.027	74.220	–711.203	–365.273	–234.907	8.180
	1600.00	62.246	420.801	370.523	–79.803	80.444	–753.084	–364.954	–226.226	7.386
	1700.00	62.259	424.575	373.593	–73.577	86.670	–795.355	–364.639	–217.566	6.685
	1800.00	62.269	428.134	376.525	–67.351	92.896	–837.992	–364.330	–208.923	6.063
	1900.00	62.278	431.501	379.331	–61.124	99.123	–880.975	–364.025	–200.298	5.507
	2000.00	62.285	434.695	382.020	–54.896	105.351	–924.286	–363.725	–191.688	5.006

References

Phase	H / S	C _p
GAS	Ja1	Ja1

184.243MAGNESIUM MOLYBDATEMgMoO4										
Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	111.168	118.801	118.801	–1401.226	0.000	–1436.646	–1401.226	–1296.049	227.062
	300.00	111.574	119.489	118.803	–1401.020	0.206	–1436.867	–1401.219	–1295.397	225.549
	400.00	126.943	153.942	123.396	–1389.007	12.219	–1450.584	–1400.153	–1260.252	164.572
	500.00	135.762	183.287	132.516	–1375.841	25.385	–1467.484	–1398.323	–1225.478	128.025
	600.00	141.968	208.614	143.137	–1361.940	39.286	–1487.108	–1396.146	–1191.110	103.695
	700.00	146.910	230.881	154.113	–1347.488	53.738	–1509.105	–1393.780	–1157.122	86.345
	800.00	151.150	250.781	164.974	–1332.581	68.645	–1533.206	–1391.289	–1123.482	73.356
	900.00	154.958	268.807	175.525	–1317.272	83.954	–1559.199	–1388.698	–1090.161	63.271
	1000.00	158.477	285.318	185.691	–1301.599	99.627	–1586.917	–1394.968	–1056.375	55.179
	1100.00	161.785	300.579	195.450	–1285.584	115.642	–1616.221	–1392.099	–1022.653	48.562
	1200.00	164.931	314.792	204.810	–1269.247	131.979	–1646.997	–1389.042	–989.201	43.059
	1300.00	167.947	328.113	213.787	–1252.602	148.624	–1679.150	–1385.806	–956.011	38.413
	1400.00	170.852	340.667	222.406	–1235.661	165.565	–1712.595	–1509.367	–919.448	34.305
	1500.00	173.660	352.550	230.690	–1218.435	182.791	–1747.261	–1504.626	–877.475	30.556

References

Phase	H / S	C _p
SOL	Nb1	Nb1,e

Mg3N2

TRIMAGNESIUM DINITRIDE

100.928

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL-A	298.15	104.527	87.864	87.864	-460.658	0.000	-486.855	-460.658	-400.498	70.166
	300.00	104.583	88.511	87.866	-460.465	0.193	-487.018	-460.657	-400.125	69.668
	400.00	107.642	119.016	92.005	-449.853	10.805	-497.460	-460.616	-379.956	49.617
	500.00	110.701	143.365	99.921	-438.936	21.722	-510.618	-460.645	-359.789	37.587
	600.00	113.760	163.818	108.910	-427.713	32.945	-526.004	-460.766	-339.608	29.566
	700.00	116.819	181.584	118.050	-416.184	44.474	-543.293	-460.992	-319.399	23.834
	800.00	119.877	197.383	126.997	-404.349	56.309	-562.256	-461.333	-299.149	19.532
	823.00	120.581	200.790	129.012	-401.584	59.074	-566.835	-461.428	-294.485	18.691
SOL-B			1.118		0.920					
	823.00	160.553	201.908	129.012	-400.664	59.994	-566.835	-460.508	-294.485	18.691
	900.00	163.988	216.419	135.876	-388.169	72.489	-582.947	-457.750	-279.077	16.197
	1000.00	168.448	233.928	144.817	-371.547	89.111	-605.475	-480.987	-257.144	13.432
	1061.00	171.169	243.982	150.232	-361.189	99.469	-620.054	-478.605	-243.560	11.991
SOL-C			1.025		1.088					
	1061.00	123.595	245.007	150.232	-360.101	100.557	-620.054	-477.517	-243.560	11.991
	1100.00	123.595	249.469	153.672	-355.281	105.377	-629.697	-477.808	-234.956	11.157
	1200.00	123.595	260.223	162.109	-342.921	117.737	-655.189	-478.588	-212.844	9.265
	1300.00	123.595	270.116	170.042	-330.562	130.096	-681.713	-479.413	-190.666	7.661
	1400.00	123.595	279.275	177.521	-318.202	142.456	-709.188	-481.168	-157.537	5.878
	1500.00	123.595	287.803	184.592	-305.843	154.815	-737.547	-485.513	-107.370	3.739
	1600.00	123.595	295.779	191.295	-293.483	167.175	-766.730	-485.888	-57.380	1.873
	1700.00	123.595	303.272	197.664	-281.124	179.534	-796.686	-485.290	-7.552	0.232
	1800.00	123.595	310.337	203.729	-268.764	191.894	-827.370	-485.716	42.123	-1.222
	1900.00	123.595	317.019	209.517	-256.405	204.253	-858.741	-484.162	91.655	-2.520
	2000.00	123.595	323.359	215.052	-244.045	216.613	-890.763	-484.626	141.053	-3.684

References

Phase	H / S	C _p
SOL-A	Pa3	Pa3
SOL-B	Pa3	Pa3
SOL-C	Pa3	Pa3

Mg(NO3)2

MAGNESIUM NITRATE

148.315

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	141.929	164.000	164.000	-790.650	0.000	-839.547	-790.650	-589.182	103.222
	300.00	142.377	164.880	164.003	-790.387	0.263	-839.851	-790.650	-587.932	102.368
	400.00	168.526	209.345	169.890	-774.868	15.782	-858.606	-789.513	-520.468	67.966
	500.00	196.631	249.949	181.888	-756.619	34.031	-881.594	-786.049	-453.559	47.383
	600.00	225.506	288.344	196.455	-735.517	55.133	-908.523	-780.195	-387.570	33.741

References

Phase	H / S	C _p
SOL	La1,Nb1	La1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [————— kJ / mol —————]	H–H298	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	73.415	88.701	88.701	–55.229	0.000	–81.675	–55.229	–54.119	9.481
	300.00	73.471	89.155	88.702	–55.093	0.136	–81.840	–55.236	–54.112	9.422
	400.00	76.525	110.710	91.620	–47.593	7.636	–91.877	–55.751	–53.668	7.008
	500.00	79.580	128.114	97.232	–39.788	15.441	–103.845	–56.528	–53.063	5.543
	600.00	82.634	142.893	103.640	–31.677	23.552	–117.413	–57.747	–52.265	4.550
	700.00	85.688	155.860	110.192	–23.261	31.968	–132.364	–58.870	–51.242	3.824
	800.00	88.743	167.502	116.640	–14.540	40.689	–148.541	–59.355	–50.117	3.272
	900.00	91.797	178.131	122.890	–5.513	49.716	–165.830	–59.771	–48.938	2.840

References

Phase	H / S	C _p	Remarks
SOL	Tk1	Ku1,e	Hu1 MPT= 1418.

MgO

MAGNESIUM OXIDE

40.304

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	37.110	26.924	26.924	-601.241	0.000	-609.268	-601.241	-568.943	99.677
	300.00	37.245	27.154	26.925	-601.172	0.069	-609.318	-601.245	-568.743	99.027
	400.00	42.560	38.678	28.460	-597.154	4.087	-612.625	-601.264	-557.896	72.854
	500.00	45.543	48.523	31.513	-592.736	8.505	-616.998	-601.044	-547.076	57.153
	600.00	47.430	57.005	35.072	-588.081	13.160	-622.284	-600.756	-536.310	46.690
	700.00	48.748	64.421	38.746	-583.269	17.972	-628.363	-600.475	-525.591	39.220
	800.00	49.741	70.998	42.374	-578.342	22.899	-635.140	-600.239	-514.910	33.620
	900.00	50.538	76.904	45.888	-573.327	27.914	-642.540	-600.067	-504.255	29.266
	1000.00	51.209	82.264	49.262	-568.239	33.002	-650.503	-608.916	-492.858	25.744
	1100.00	51.796	87.173	52.488	-563.088	38.153	-658.978	-608.783	-481.258	22.853
	1200.00	52.324	91.703	55.570	-557.882	43.359	-667.925	-608.615	-469.672	20.444
	1300.00	52.809	95.910	58.513	-552.625	48.616	-677.308	-608.413	-458.102	18.407
	1400.00	53.264	99.841	61.326	-547.321	53.920	-687.098	-735.143	-442.919	16.526
	1500.00	53.695	103.530	64.018	-541.973	59.268	-697.268	-733.694	-422.096	14.699
	1600.00	54.109	107.009	66.597	-536.582	64.659	-707.797	-732.215	-401.371	13.103
	1700.00	54.509	110.301	69.072	-531.151	70.090	-718.664	-730.709	-380.740	11.699
	1800.00	54.898	113.428	71.450	-525.681	75.560	-729.852	-729.175	-360.197	10.453
	1900.00	55.278	116.407	73.739	-520.172	81.069	-741.344	-727.615	-339.741	9.340
	2000.00	55.651	119.251	75.944	-514.626	86.615	-753.128	-726.028	-319.367	8.341
	2100.00	56.018	121.976	78.071	-509.042	92.199	-765.191	-724.416	-299.074	7.439
	2200.00	56.381	124.590	80.127	-503.422	97.819	-777.520	-722.779	-278.858	6.621
	2300.00	56.740	127.104	82.115	-497.766	103.475	-790.105	-721.117	-258.717	5.876
	2400.00	57.095	129.526	84.040	-492.074	109.167	-802.938	-719.430	-238.649	5.194
	2500.00	57.447	131.864	85.907	-486.347	114.894	-816.008	-717.719	-218.651	4.568
	2600.00	57.797	134.124	87.718	-480.585	120.656	-829.308	-715.983	-198.723	3.992
	2700.00	58.145	136.312	89.478	-474.788	126.453	-842.830	-714.223	-178.861	3.460
	2800.00	58.491	138.433	91.188	-468.956	132.285	-856.568	-712.439	-159.066	2.967
	2900.00	58.836	140.491	92.853	-463.090	138.151	-870.515	-710.630	-139.334	2.510
	3000.00	59.179	142.492	94.474	-457.189	144.052	-884.664	-708.797	-119.665	2.084
	3100.00	59.521	144.438	96.055	-451.254	149.987	-899.011	-706.938	-100.058	1.686
	3105.00	59.538	144.534	96.133	-450.956	150.285	-899.734	-706.844	-99.079	1.667
			25.063		77.822					
LIQ	3105.00	66.944	169.597	96.133	-373.134	228.107	-899.734	-629.022	-99.079	1.667
	3200.00	66.944	171.615	98.344	-366.774	234.467	-915.942	-626.544	-82.903	1.353
	3300.00	66.944	173.675	100.596	-360.080	241.161	-933.207	-623.944	-65.954	1.044
	3400.00	66.944	175.673	102.775	-353.386	247.855	-950.675	-621.352	-49.085	0.754
	3500.00	66.944	177.614	104.885	-346.691	254.550	-968.340	-618.768	-32.291	0.482
	3600.00	66.944	179.500	106.932	-339.997	261.244	-986.196	-616.192	-15.571	0.226
	3700.00	66.944	181.334	108.918	-333.302	267.939	-1004.238	-613.623	1.078	-0.015
	3800.00	66.944	183.119	110.847	-326.608	274.633	-1022.461	-611.062	17.657	-0.243
	3900.00	66.944	184.858	112.723	-319.914	281.327	-1040.860	-608.507	34.169	-0.458
	4000.00	66.944	186.553	114.548	-313.219	288.022	-1059.431	-605.959	50.615	-0.661

References

Phase	H / S	C _p
SOL	Ja1	Ja1
LIQ	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S — (G-H298)/T —	—(G-H298)/T —	H [————— kJ / mol —————]	H-H298	G kJ / mol	ΔH _f	ΔG _f [—————]	log K _f [—]
SOL	298.15	116.191	80.630	80.630	-2299.903	0.000	-2323.943	-2299.903	-2175.011	381.053
	300.00	116.806	81.351	80.632	-2299.687	0.216	-2324.093	-2299.932	-2174.236	378.568
	400.00	139.375	118.454	85.538	-2286.736	13.167	-2334.118	-2300.488	-2132.206	278.438
	500.00	151.260	150.946	95.447	-2272.153	27.750	-2347.626	-2299.974	-2090.183	218.360
	600.00	158.939	179.244	107.107	-2256.621	43.282	-2364.167	-2299.057	-2048.307	178.321
	700.00	164.632	204.190	119.230	-2240.431	59.472	-2383.364	-2298.014	-2006.597	149.734
	800.00	169.267	226.485	131.268	-2223.729	76.174	-2404.917	-2297.013	-1965.036	128.304
	900.00	173.287	246.659	142.986	-2206.597	93.306	-2428.590	-2296.208	-1923.590	111.642
	1000.00	176.925	265.107	154.289	-2189.084	110.819	-2454.192	-2325.715	-1879.944	98.198
	1100.00	180.313	282.131	165.147	-2171.221	128.682	-2481.564	-2324.483	-1835.424	87.157
	1200.00	183.530	297.959	175.562	-2153.027	146.876	-2510.578	-2323.001	-1791.028	77.961
	1300.00	186.629	312.772	185.553	-2134.519	165.384	-2541.122	-2321.271	-1746.765	70.186
	1400.00	189.640	326.713	195.143	-2115.705	184.198	-2573.103	-2446.261	-1699.016	63.391
	1500.00	192.587	339.898	204.358	-2096.593	203.310	-2606.440	-2442.859	-1645.759	57.310
	1600.00	195.485	352.420	213.224	-2077.189	222.714	-2641.061	-2439.218	-1592.737	51.998
	1700.00	198.345	364.357	221.765	-2057.497	242.406	-2676.904	-2435.338	-1539.949	47.317
	1800.00	201.176	375.774	230.007	-2037.521	262.382	-2713.915	-2431.222	-1487.397	43.163
	1900.00	203.983	386.727	237.969	-2017.263	282.640	-2752.044	-2426.871	-1435.080	39.453
	2000.00	206.771	397.261	245.672	-1996.725	303.178	-2791.246	-2422.287	-1382.998	36.120
	2100.00	209.544	407.416	253.133	-1975.909	323.994	-2831.483	-2417.470	-1331.151	33.111
	2200.00	212.304	417.228	260.371	-1954.816	345.087	-2872.718	-2412.422	-1279.538	30.380
	2300.00	215.054	426.726	267.398	-1933.448	366.455	-2914.918	-2407.144	-1228.161	27.892
	2400.00	217.795	435.937	274.229	-1911.806	388.097	-2958.054	-2401.635	-1177.018	25.617
	2408.00	218.014	436.662	274.768	-1910.063	389.840	-2961.544	-2401.185	-1172.937	25.443
				81.664		196.648				
LIQ	2408.00	230.120	518.326	274.768	-1713.415	586.488	-2961.544	-2204.537	-1172.937	25.443
	2500.00	230.120	526.954	283.891	-1692.244	607.659	-3009.630	-2198.251	-1133.642	23.686

References

Phase	H / S	C _p
SOL	Nb1	Nb1,e
LIQ	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	43.033	226.464	226.464	-164.766	0.000	-232.286	-164.766	-172.480	30.218
	300.00	43.127	226.730	226.465	-164.686	0.080	-232.705	-164.786	-172.528	30.040
	400.00	46.910	239.709	228.208	-160.166	4.600	-256.049	-165.755	-174.957	22.847
	500.00	49.111	250.433	231.613	-155.356	9.410	-280.572	-166.605	-177.158	18.508
	600.00	50.553	259.522	235.526	-150.368	14.398	-306.082	-167.449	-179.189	15.600
	700.00	51.608	267.398	239.529	-145.258	19.508	-332.436	-168.339	-181.077	13.512
	800.00	52.456	274.346	243.455	-140.054	24.712	-359.530	-169.301	-182.832	11.938
	900.00	53.191	280.568	247.239	-134.771	29.995	-387.281	-170.348	-184.461	10.706
	1000.00	53.864	286.207	250.859	-129.417	35.349	-415.625	-180.434	-185.211	9.674
	1100.00	54.508	291.371	254.310	-123.999	40.767	-444.507	-181.553	-185.634	8.815
	1200.00	55.141	296.141	257.600	-118.516	46.250	-473.886	-182.648	-185.957	8.094
	1300.00	55.679	300.576	260.737	-112.975	51.791	-503.724	-183.722	-186.189	7.481
	1400.00	56.199	304.721	263.732	-107.381	57.385	-533.991	-311.744	-182.711	6.817
	1500.00	56.682	308.615	266.596	-101.737	63.029	-564.660	-311.603	-173.499	6.042
	1600.00	57.125	312.288	269.338	-96.046	68.720	-595.707	-311.450	-164.297	5.364
	1700.00	57.526	315.763	271.968	-90.313	74.453	-627.111	-311.288	-155.105	4.766
	1800.00	57.889	319.062	274.493	-84.542	80.224	-658.854	-311.121	-145.922	4.235
	1900.00	58.217	322.201	276.922	-78.737	86.029	-690.918	-310.950	-136.749	3.759
	2000.00	58.514	325.195	279.261	-72.900	91.866	-723.289	-310.778	-127.585	3.332
	2100.00	58.783	328.056	281.517	-67.035	97.731	-755.953	-310.607	-118.430	2.946
	2200.00	59.027	330.796	283.696	-61.144	103.622	-788.896	-310.439	-109.282	2.595
	2300.00	59.250	333.425	285.801	-55.230	109.536	-822.108	-310.274	-100.142	2.274
	2400.00	59.453	335.951	287.838	-49.295	115.471	-855.578	-310.115	-91.010	1.981
	2500.00	59.640	338.382	289.812	-43.340	121.426	-889.295	-309.961	-81.883	1.711
	2600.00	59.811	340.724	291.725	-37.368	127.398	-923.251	-309.814	-72.763	1.462
	2700.00	59.970	342.985	293.582	-31.378	133.388	-957.437	-309.674	-63.649	1.231
	2800.00	60.116	345.168	295.386	-25.374	139.392	-991.846	-309.542	-54.539	1.017
	2900.00	60.252	347.280	297.139	-19.356	145.410	-1026.469	-309.418	-45.434	0.818
	3000.00	60.379	349.325	298.844	-13.324	151.442	-1061.299	-309.302	-36.333	0.633

References

Phase	H / S	C _p
GAS	Ja1	Ja1

$\text{Mg}(\text{OH})_2$

Phase	T [K]	C _p [————— J / (K mol) —————]	S —(G-H298)/T— [————— kJ / mol —————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [—]	
SOL	298.15	77.215	63.220	63.220	-924.664	0.000	-943.513	-924.664	-833.644	146.051
	300.00	77.590	63.699	63.222	-924.521	0.143	-943.631	-924.675	-833.079	145.052
	400.00	91.703	88.191	66.465	-915.974	8.690	-951.250	-924.556	-802.532	104.800
	500.00	99.617	109.570	72.998	-906.378	18.286	-961.163	-923.610	-772.124	80.663
	542.20	102.124	117.745	76.166	-902.120	22.544	-965.961	-923.070	-759.360	73.156

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 NDPT= 542.2

76.765

 $\text{Mg}(\text{OH})\text{Cl}$

Phase	T [K]	C _p [————— J / (K mol) —————]	S —(G-H298)/T	—(G-H298)/T	H [————— kJ / mol —————]	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	74.116	83.701	83.701	-799.600	0.000	-824.555	-799.600	-731.488	128.154
	300.00	74.228	84.160	83.702	-799.463	0.137	-824.711	-799.594	-731.066	127.290
	400.00	80.283	106.343	86.686	-791.737	7.863	-834.274	-799.092	-708.288	92.493
	500.00	86.337	124.908	92.520	-783.406	16.194	-845.860	-798.206	-685.682	71.633
	600.00	92.391	141.184	99.301	-774.470	25.130	-859.180	-796.918	-663.291	57.745
	700.00	98.445	155.881	106.350	-764.928	34.672	-874.045	-795.215	-641.149	47.843
	800.00	104.500	169.422	113.398	-754.781	44.819	-890.318	-793.088	-619.279	40.435

References

Phase	H / S	C _p
SOL	La1,Nb1	La1

MgSiO3

MAGNESIUM METASILICATE

100.389

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
SOL–1	298.15	81.946	67.768	67.768	–1548.917	0.000	–1569.122	–1548.917	–1462.022	256.140
	300.00	82.255	68.276	67.770	–1548.765	0.152	–1569.248	–1548.930	–1461.482	254.467
	400.00	94.238	93.759	71.163	–1539.878	9.039	–1577.382	–1549.173	–1432.276	187.036
	500.00	101.552	115.624	77.923	–1530.067	18.850	–1587.878	–1548.898	–1403.076	146.578
	600.00	107.027	134.641	85.825	–1519.628	29.289	–1600.412	–1548.361	–1373.959	119.614
	700.00	111.636	151.493	94.025	–1508.689	40.228	–1614.735	–1547.658	–1344.945	100.361
	800.00	115.781	166.674	102.173	–1497.316	51.601	–1630.655	–1546.821	–1316.042	85.929
	900.00	119.658	180.537	110.121	–1485.542	63.375	–1648.026	–1545.856	–1287.251	74.710
	903.00	119.771	180.936	110.355	–1485.183	63.734	–1648.568	–1545.825	–1286.389	74.412
			0.741		0.669					
SOL–2	903.00	120.340	181.677	110.355	–1484.514	64.403	–1648.568	–1545.156	–1286.389	74.412
	1000.00	120.340	193.955	117.879	–1472.841	76.076	–1666.796	–1553.164	–1257.885	65.705
	1100.00	120.340	205.425	125.325	–1460.807	88.110	–1686.774	–1552.312	–1228.400	58.332
	1200.00	120.340	215.896	132.442	–1448.773	100.144	–1707.848	–1551.564	–1198.987	52.191
	1258.00	120.340	221.576	136.422	–1441.793	107.124	–1720.536	–1551.174	–1181.955	49.077
			1.297		1.632					
SOL–3	1258.00	122.432	222.873	136.422	–1440.161	108.756	–1720.536	–1549.542	–1181.955	49.077
	1300.00	122.432	226.894	139.280	–1435.019	113.898	–1729.981	–1549.190	–1169.689	46.999
	1400.00	122.432	235.967	145.867	–1422.776	126.141	–1753.130	–1675.378	–1136.897	42.418
	1500.00	122.432	244.414	152.158	–1410.533	138.384	–1777.154	–1673.500	–1098.500	38.253
	1600.00	122.432	252.316	158.174	–1398.289	150.628	–1801.995	–1671.701	–1060.226	34.613
	1700.00	122.432	259.738	163.932	–1386.046	162.871	–1827.601	–1720.158	–1021.615	31.390
	1800.00	122.432	266.736	169.451	–1373.803	175.114	–1853.928	–1718.287	–980.579	28.456
	1850.00	122.432	270.091	172.126	–1367.681	181.236	–1867.349	–1717.365	–960.099	27.108
			40.709		75.312					
LIQ	1850.00	146.440	310.800	172.126	–1292.369	256.548	–1867.349	–1642.053	–960.099	27.108
	1900.00	146.440	314.705	175.827	–1285.047	263.870	–1882.988	–1639.939	–941.697	25.889
	2000.00	146.440	322.217	182.960	–1270.403	278.514	–1914.837	–1635.737	–905.056	23.638
	2100.00	146.440	329.362	189.763	–1255.759	293.158	–1947.419	–1631.570	–868.624	21.606
	2200.00	146.440	336.174	196.264	–1241.115	307.802	–1980.698	–1627.436	–832.391	19.763
	2300.00	146.440	342.683	202.490	–1226.471	322.446	–2014.643	–1623.336	–796.344	18.086
	2400.00	146.440	348.916	208.462	–1211.827	337.090	–2049.226	–1619.270	–760.475	16.551
	2500.00	146.440	354.894	214.200	–1197.183	351.734	–2084.418	–1615.236	–724.775	15.143
	2600.00	146.440	360.637	219.723	–1182.539	366.378	–2120.196	–1611.234	–689.236	13.847
	2700.00	146.440	366.164	225.045	–1167.895	381.022	–2156.538	–1607.265	–653.850	12.649
	2800.00	146.440	371.490	230.181	–1153.251	395.666	–2193.423	–1603.326	–618.610	11.540

References

Phase	H / S	C _p
SOL–1	Ja1	Ja1
SOL–2	Ja1	Ja1
SOL–3	Ja1	Ja1
LIQ	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	118.717	95.140	95.140	-2176.935	0.000	-2205.301	-2176.935	-2057.875	360.531
	300.00	119.152	95.876	95.142	-2176.715	0.220	-2205.478	-2176.953	-2057.137	358.179
	400.00	137.398	132.875	100.063	-2163.810	13.125	-2216.960	-2177.215	-2017.124	263.409
	500.00	148.766	164.845	109.899	-2149.462	27.473	-2231.884	-2176.601	-1977.161	206.553
	600.00	156.557	192.696	121.428	-2134.174	42.761	-2249.792	-2175.583	-1937.364	168.663
	700.00	162.392	217.287	133.400	-2118.215	58.720	-2270.315	-2174.390	-1897.754	141.612
	800.00	167.078	239.287	145.285	-2101.734	75.201	-2293.163	-2173.136	-1858.320	121.336
	900.00	171.043	259.200	156.853	-2084.823	92.112	-2318.103	-2171.877	-1819.043	105.575
	1000.00	174.530	277.405	168.011	-2067.541	109.394	-2344.946	-2188.541	-1778.390	92.894
	1100.00	177.684	294.190	178.729	-2049.928	127.007	-2373.537	-2187.128	-1737.442	82.504
	1200.00	180.593	309.777	189.008	-2032.012	144.923	-2403.744	-2185.537	-1696.631	73.852
	1300.00	183.315	324.340	198.864	-2013.816	163.119	-2435.458	-2183.775	-1655.959	66.537
	1400.00	185.887	338.021	208.320	-1995.354	181.581	-2468.583	-2435.778	-1608.172	60.002
	1500.00	188.335	350.930	217.401	-1976.642	200.293	-2503.037	-2431.331	-1549.211	53.948
	1600.00	190.676	363.160	226.132	-1957.691	219.244	-2538.746	-2426.736	-1490.552	48.662
	1700.00	192.921	374.787	234.537	-1938.510	238.425	-2575.649	-2472.180	-1431.738	43.992
	1800.00	195.079	385.876	242.639	-1919.110	257.825	-2613.686	-2467.088	-1370.682	39.776
	1900.00	197.155	396.479	250.459	-1899.497	277.438	-2652.808	-2461.831	-1309.913	36.012
	2000.00	199.153	406.643	258.016	-1879.681	297.254	-2692.967	-2456.417	-1249.425	32.632
	2100.00	201.074	416.406	265.328	-1859.669	317.266	-2734.123	-2450.853	-1189.212	29.580
LIQ	2171.00	202.391	423.114	270.379	-1845.346	331.589	-2763.927	-2446.816	-1146.624	27.588
			32.763		71.128					
	2171.00	205.016	455.877	270.379	-1774.218	402.717	-2763.927	-2375.688	-1146.624	27.588
	2200.00	205.016	458.597	272.842	-1768.272	408.663	-2777.187	-2373.950	-1130.217	26.835
	2300.00	205.016	467.711	281.118	-1747.771	429.164	-2823.506	-2367.986	-1073.818	24.387
	2400.00	205.016	476.436	289.075	-1727.269	449.666	-2870.716	-2362.067	-1017.677	22.149
	2500.00	205.016	484.805	296.738	-1706.768	470.167	-2918.781	-2356.192	-961.781	20.095
	2600.00	205.016	492.846	304.127	-1686.266	490.669	-2967.666	-2350.359	-906.120	18.204
	2700.00	205.016	500.584	311.261	-1665.764	511.171	-3017.340	-2344.569	-850.683	16.457
	2800.00	205.016	508.039	318.157	-1645.263	531.672	-3067.773	-2338.820	-795.459	14.839
	2900.00	205.016	515.234	324.829	-1624.761	552.174	-3118.939	-2333.111	-740.439	13.337
	3000.00	205.016	522.184	331.292	-1604.260	572.675	-3170.812	-2327.440	-685.617	11.938

References

Phase	H / S	C _p
SOL	Ja1	Ja1
LIQ	Ja1	Ja1

Mg3Si2O5(OH)4

CHRYSOTILE

277.112

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	273.680	221.296	221.296	-4365.598	0.000	-4431.577	-4365.598	-4037.962	707.434
	300.00	274.942	222.993	221.301	-4365.091	0.507	-4431.988	-4365.654	-4035.929	702.718
	400.00	323.919	309.533	232.768	-4334.892	30.706	-4458.705	-4366.536	-3925.786	512.655
	500.00	353.690	385.217	255.860	-4300.920	64.678	-4493.528	-4364.738	-3815.766	398.630
	600.00	375.902	451.740	283.076	-4264.399	101.199	-4535.443	-4361.407	-3706.264	322.659
	700.00	394.544	511.118	311.487	-4225.856	139.742	-4583.639	-4356.996	-3597.409	268.442
	800.00	411.284	564.910	339.854	-4185.553	180.045	-4637.481	-4351.699	-3489.249	227.825
	900.00	426.917	614.264	367.639	-4143.636	221.962	-4696.473	-4345.597	-3381.801	196.275
	1000.00	441.864	660.022	394.616	-4100.192	265.406	-4760.214	-4365.577	-3272.800	170.954

References

Phase	H / S	C _p
SOL	Nb1,S5	S5

Mg3Si4O10(OH)2

TALC

379.266

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	321.698	260.697	260.697	-5922.498	0.000	-6000.225	-5922.498	-5542.603	971.041
	300.00	323.050	262.691	260.703	-5921.902	0.596	-6000.709	-5922.567	-5540.245	964.642
	400.00	376.678	363.715	274.113	-5886.657	35.841	-6032.143	-5924.199	-5412.457	706.794
	500.00	410.915	451.654	301.027	-5847.185	75.313	-6073.012	-5923.125	-5284.605	552.079
	600.00	437.519	528.999	332.706	-5804.722	117.776	-6122.121	-5920.415	-5157.133	448.968
	700.00	460.518	598.203	365.776	-5759.799	162.699	-6178.541	-5916.466	-5030.216	375.359
	800.00	481.597	661.088	398.817	-5712.681	209.817	-6241.552	-5911.423	-4903.940	320.194
	900.00	501.560	718.973	431.216	-5663.516	258.982	-6310.592	-5905.330	-4778.360	277.329
	1000.00	520.829	772.820	462.714	-5612.392	310.106	-6385.212	-5925.037	-4651.241	242.956
	1100.00	539.644	823.345	493.225	-5559.366	363.132	-6465.046	-5916.516	-4524.262	214.839

References

Phase	H / S	C _p
SOL	Nb1	S5

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	—(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f kJ / mol	ΔG _f kJ / mol	log K _f [–]
SOL	298.15	628.991	558.982	558.982	–12086.405	0.000	–12253.066	–12086.405	–11367.041	1991.458
	300.00	632.281	562.883	558.994	–12085.238	1.167	–12254.103	–12086.563	–11362.577	1978.401
	400.00	752.921	763.493	585.527	–12015.218	71.187	–12320.616	–12089.939	–11120.503	1452.189
	500.00	816.424	938.936	639.081	–11936.478	149.927	–12405.946	–12087.742	–10878.329	1136.451
	600.00	857.436	1091.635	702.065	–11852.663	233.742	–12507.644	–12083.290	–10636.841	926.019
	700.00	887.830	1226.187	767.520	–11765.338	321.067	–12623.669	–12077.880	–10396.186	775.773
	800.00	912.564	1346.402	832.499	–11675.283	411.122	–12752.404	–12072.045	–10156.339	663.141
	900.00	934.008	1455.149	895.736	–11582.933	503.472	–12892.568	–12066.003	–9917.237	575.581
	1000.00	953.408	1554.575	956.719	–11488.549	597.856	–13043.124	–12122.485	–9673.510	505.292
	1100.00	971.473	1646.301	1015.292	–11392.296	694.109	–13203.226	–12115.468	–9428.944	447.743

References

Phase	H / S	C _p
SOL	S5	S5

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	91.893	74.559	74.559	–1572.556	0.000	–1594.786	–1572.556	–1484.125	260.013
	300.00	92.199	75.128	74.561	–1572.386	0.170	–1594.924	–1572.560	–1483.577	258.314
	400.00	105.184	103.588	78.353	–1562.462	10.094	–1603.897	–1572.233	–1453.939	189.865
	500.00	113.185	127.985	85.900	–1551.514	21.042	–1615.506	–1571.242	–1424.472	148.814
	600.00	118.512	149.121	94.716	–1539.913	32.643	–1629.385	–1569.952	–1395.236	121.466
	700.00	122.361	167.693	103.841	–1527.860	44.696	–1645.245	–1568.558	–1366.226	101.949
	800.00	125.343	184.234	112.876	–1515.469	57.087	–1662.856	–1567.166	–1337.417	87.324
	900.00	127.787	199.143	121.646	–1502.809	69.747	–1682.038	–1565.835	–1308.779	75.960
	1000.00	129.880	212.717	130.085	–1489.923	82.633	–1702.641	–1573.542	–1279.526	66.836
	1100.00	131.736	225.185	138.171	–1476.841	95.715	–1724.544	–1572.293	–1250.185	59.366
	1200.00	133.425	236.721	145.909	–1463.582	108.974	–1747.647	–1575.032	–1220.839	53.142
	1300.00	134.994	247.463	153.312	–1450.160	122.396	–1771.862	–1573.235	–1191.396	47.871
	1400.00	136.474	257.522	160.400	–1436.586	135.970	–1797.116	–1698.357	–1158.464	43.223
	1500.00	137.888	266.986	167.194	–1422.867	149.689	–1823.346	–1695.296	–1120.007	39.002
	1600.00	139.250	275.929	173.713	–1409.010	163.546	–1850.496	–1692.212	–1081.755	35.316
	1700.00	140.572	284.411	179.977	–1395.019	177.537	–1878.517	–1689.115	–1043.696	32.069
	1800.00	141.862	292.482	186.005	–1380.897	191.659	–1907.365	–1686.014	–1005.819	29.188
	1900.00	143.126	300.186	191.813	–1366.647	205.909	–1937.001	–1682.914	–968.115	26.615
	1903.00	143.164	300.412	191.984	–1366.218	206.338	–1937.902	–1682.821	–966.987	26.542
			47.490		90.374					
LIQ	1903.00	163.176	347.902	191.984	–1275.844	296.712	–1937.902	–1592.447	–966.987	26.542
	2000.00	163.176	356.015	199.745	–1260.016	312.540	–1972.045	–1601.697	–934.784	24.414
	2100.00	163.176	363.976	207.377	–1243.698	328.858	–2008.048	–1596.693	–901.561	22.425
	2200.00	163.176	371.567	214.669	–1227.380	345.176	–2044.828	–1591.722	–868.577	20.623
	2300.00	163.176	378.821	221.650	–1211.063	361.493	–2082.350	–1586.786	–835.817	18.982
	2400.00	163.176	385.765	228.344	–1194.745	377.811	–2120.582	–1581.882	–803.271	17.483
	2500.00	163.176	392.426	234.775	–1178.428	394.128	–2159.494	–1577.012	–770.929	16.108
	2600.00	163.176	398.826	240.962	–1162.110	410.446	–2199.058	–1572.174	–738.782	14.842
	2700.00	163.176	404.985	246.924	–1145.792	426.764	–2239.251	–1567.367	–706.819	13.674
	2800.00	163.176	410.919	252.676	–1129.475	443.081	–2280.048	–1562.591	–675.035	12.593
	2900.00	163.176	416.645	258.232	–1113.157	459.399	–2321.428	–1557.845	–643.420	11.589
	3000.00	163.176	422.177	263.605	–1096.840	475.716	–2363.370	–1553.128	–611.969	10.655

References

Phase	H / S	C _p
SOL	Ja1	Ja1
LIQ	Ja1	Ja1

Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	146.877	135.603	135.603	–2509.354	0.000	–2549.784	–2509.354	–2368.788	415.002
	300.00	147.341	136.513	135.606	–2509.082	0.272	–2550.036	–2509.357	–2367.916	412.291
	400.00	165.658	181.676	141.640	–2493.339	16.015	–2566.010	–2508.771	–2320.824	303.068
	500.00	176.678	219.909	153.571	–2476.185	33.169	–2586.140	–2507.334	–2273.992	237.562
	600.00	184.556	252.849	167.436	–2458.106	51.248	–2609.816	–2505.510	–2227.490	193.920
	700.00	190.869	281.787	181.747	–2439.325	70.029	–2636.577	–2503.515	–2181.310	162.771
	800.00	196.319	307.637	195.896	–2419.961	89.393	–2666.070	–2501.457	–2135.421	139.429
	900.00	201.253	331.049	209.632	–2400.079	109.275	–2698.023	–2499.390	–2089.790	121.288
	1000.00	205.862	352.494	222.861	–2379.721	129.633	–2732.215	–2506.282	–2043.632	106.748
	1100.00	210.254	372.322	235.558	–2358.914	150.440	–2768.468	–2504.122	–1997.470	94.852
	1200.00	214.497	390.799	247.734	–2337.675	171.679	–2806.634	–2509.842	–1951.273	84.937
	1300.00	218.634	408.132	259.412	–2316.018	193.336	–2846.590	–2506.379	–1904.864	76.538
	1400.00	222.694	424.484	270.624	–2293.951	215.403	–2888.228	–2629.671	–1855.102	69.215
	1500.00	226.695	439.985	281.403	–2271.481	237.873	–2931.458	–2624.618	–1799.951	62.680
	1600.00	230.653	454.742	291.779	–2248.613	260.741	–2976.200	–2619.385	–1745.143	56.973
	1700.00	234.576	468.843	301.783	–2225.352	284.002	–3022.385	–2613.987	–1690.667	51.948
	1800.00	238.472	482.361	311.442	–2201.699	307.655	–3069.950	–2608.439	–1636.513	47.490
	1900.00	242.347	495.359	320.782	–2177.658	331.696	–3118.840	–2602.749	–1582.672	43.511
	1963.00	244.778	503.304	326.513	–2162.313	347.041	–3150.298	–2627.386	–1548.558	41.207
LIQ			74.600		146.440					
	1963.00	261.082	577.904	326.513	–2015.873	493.481	–3150.298	–2480.946	–1548.558	41.207
	2000.00	261.082	582.779	331.209	–2006.213	503.141	–3171.771	–2478.174	–1531.010	39.986
	2100.00	261.082	595.517	343.494	–1980.105	529.249	–3230.691	–2470.721	–1483.835	36.908
	2200.00	261.082	607.663	355.228	–1953.997	555.357	–3290.855	–2463.324	–1437.014	34.119
	2300.00	261.082	619.268	366.457	–1927.889	581.465	–3352.206	–2455.984	–1390.528	31.580
	2400.00	261.082	630.380	377.224	–1901.781	607.573	–3414.692	–2448.700	–1344.360	29.259
	2500.00	261.082	641.038	387.565	–1875.673	633.681	–3478.267	–2441.469	–1298.495	27.131
	2600.00	261.082	651.277	397.512	–1849.564	659.790	–3542.886	–2434.293	–1252.918	25.171
	2700.00	261.082	661.131	407.095	–1823.456	685.898	–3608.509	–2427.170	–1207.616	23.363
	2800.00	261.082	670.626	416.338	–1797.348	712.006	–3675.100	–2420.098	–1162.577	21.688
	2900.00	261.082	679.787	425.265	–1771.240	738.114	–3742.623	–2413.075	–1117.789	20.134
	3000.00	261.082	688.638	433.898	–1745.132	764.222	–3811.047	–2406.101	–1073.243	18.687

References

Phase	H / S	C _p
SOL	Ja1	Ja1
LIQ	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	128.575	115.102	115.102	-2164.383	0.000	-2198.701	-2164.383	-2047.715	358.751
	300.00	129.026	115.899	115.104	-2164.145	0.238	-2198.914	-2164.392	-2046.991	356.413
	400.00	146.285	155.653	120.407	-2150.285	14.098	-2212.546	-2164.165	-2007.859	262.200
	500.00	156.410	189.460	130.925	-2135.115	29.268	-2229.846	-2163.152	-1968.890	205.689
	600.00	163.687	218.649	143.169	-2119.095	45.288	-2250.285	-2161.809	-1930.160	168.035
	700.00	169.582	244.337	155.823	-2102.423	61.960	-2273.459	-2160.328	-1891.668	141.158
	800.00	174.708	267.323	168.349	-2085.204	79.179	-2299.062	-2158.798	-1853.392	121.014
	900.00	179.358	288.172	180.522	-2067.498	96.885	-2326.853	-2157.263	-1815.309	105.358
	1000.00	183.686	307.296	192.256	-2049.343	115.040	-2356.639	-2173.639	-1775.880	92.762
	1100.00	187.779	324.997	203.529	-2030.768	133.615	-2388.265	-2171.915	-1736.186	82.445
	1200.00	191.691	341.505	214.346	-2011.793	152.590	-2421.599	-2173.976	-1696.539	73.848
	1300.00	195.454	356.998	224.730	-1992.435	171.948	-2456.532	-2171.298	-1656.859	66.573
	1400.00	199.091	371.616	234.704	-1972.707	191.676	-2492.969	-2422.299	-1610.138	60.075
	1500.00	202.616	385.473	244.298	-1952.620	211.763	-2530.830	-2416.771	-1552.318	54.057
	1600.00	206.039	398.659	253.537	-1932.187	232.196	-2570.041	-2411.022	-1494.874	48.803
	1700.00	209.368	411.251	262.446	-1911.416	252.967	-2610.542	-2405.070	-1437.796	44.178
	1800.00	212.609	423.310	271.050	-1890.316	274.067	-2652.274	-2398.927	-1381.074	40.078
	1900.00	215.765	434.890	279.371	-1868.897	295.486	-2695.188	-2392.606	-1324.699	36.419
	2000.00	218.840	446.036	287.427	-1847.166	317.217	-2739.237	-2400.250	-1268.215	33.122
	2005.00	218.992	446.582	287.823	-1846.071	318.312	-2741.469	-2399.918	-1265.385	32.966
LIQ			64.690		129.704					
	2005.00	228.446	511.273	287.823	-1716.367	448.016	-2741.469	-2270.214	-1265.385	32.966
	2100.00	228.446	521.848	298.173	-1694.665	469.718	-2790.546	-2263.034	-1217.943	30.295
	2200.00	228.446	532.476	308.583	-1671.820	492.563	-2843.266	-2255.519	-1168.353	27.740
	2300.00	228.446	542.630	318.540	-1648.975	515.408	-2897.025	-2248.049	-1119.104	25.416
	2400.00	228.446	552.353	328.081	-1626.131	538.252	-2951.778	-2240.624	-1070.178	23.292
	2500.00	228.446	561.679	337.240	-1603.286	561.097	-3007.483	-2233.242	-1021.562	21.344
	2600.00	228.446	570.638	346.046	-1580.442	583.941	-3064.102	-2225.903	-973.239	19.553
	2700.00	228.446	579.260	354.524	-1557.597	606.786	-3121.599	-2218.607	-925.199	17.899
	2800.00	228.446	587.568	362.700	-1534.752	629.631	-3179.943	-2211.352	-877.427	16.369
	2900.00	228.446	595.585	370.593	-1511.908	652.475	-3239.103	-2204.136	-829.915	14.948
	3000.00	228.446	603.329	378.223	-1489.063	675.320	-3299.051	-2196.959	-782.650	13.627

References

Phase	H / S	C _p
SOL	Ja1	Ja1
LIQ	Ja1	Ja1

262.858

MAGNESIUM ORTHOPHOSPHATE

Mg3(PO4)2

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	213.107	189.201	189.201	–3780.662	0.000	–3837.072	–3780.662	–3538.696	619.965
	300.00	213.593	190.520	189.205	–3780.267	0.395	–3837.423	–3780.711	–3537.194	615.880
	400.00	239.026	255.491	197.891	–3757.622	23.040	–3859.819	–3784.106	–3455.325	451.219
	500.00	262.568	311.395	215.122	–3732.525	48.137	–3888.223	–3784.517	–3373.048	352.380
	600.00	284.045	361.197	235.389	–3705.177	75.485	–3921.896	–3783.433	–3290.833	286.492
	700.00	303.399	406.464	256.643	–3675.787	104.875	–3960.312	–3781.040	–3208.906	239.451
	800.00	320.605	448.124	278.008	–3644.569	136.093	–4003.068	–3777.501	–3127.401	204.198
	900.00	335.651	486.776	299.083	–3611.738	168.924	–4049.837	–3772.977	–3046.401	176.809
	1000.00	348.531	522.826	319.675	–3577.511	203.151	–4100.337	–3794.481	–2963.676	154.807
	1100.00	359.242	556.564	339.693	–3542.104	238.558	–4154.325	–3788.167	–2880.894	136.802
	1200.00	367.781	588.204	359.098	–3505.735	274.927	–4211.580	–3908.191	–2796.545	121.730
	1300.00	374.148	617.908	377.876	–3468.620	312.042	–4271.901	–3898.915	–2704.280	108.659
	1400.00	378.340	645.802	396.028	–3430.978	349.684	–4335.101	–4270.133	–2601.861	97.077
	1500.00	380.358	671.987	413.562	–3393.025	387.637	–4401.005	–4256.713	–2483.166	86.472
	1600.00	380.202	696.541	430.489	–3354.979	425.683	–4469.444	–4243.312	–2365.368	77.221
	1621.00	379.892	701.497	433.968	–3346.998	433.664	–4484.124	–4240.520	–2340.738	75.427
			74.853		121.336					
LIQ	1621.00	474.718	776.349	433.968	–3225.662	555.000	–4484.124	–4119.184	–2340.738	75.427
	1700.00	475.386	798.955	450.408	–3188.133	592.529	–4546.355	–4101.217	–2254.496	69.272
	1800.00	476.231	826.151	470.534	–3140.552	640.110	–4627.623	–4078.489	–2146.521	62.290
	1900.00	477.076	851.922	489.935	–3092.886	687.776	–4711.538	–4055.775	–2039.809	56.078
	2000.00	477.922	876.414	508.651	–3045.136	735.526	–4797.965	–4033.074	–1934.293	50.519

References

Phase	H / S	C _p
SOL	Co1	Ja1
LIQ	Ja1	Ja1

255.810

2–MAGNESIUM LEAD

Mg2Pb

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	72.466	110.876	110.876	–49.706	0.000	–82.764	–49.706	–43.963	7.702
	300.00	72.530	111.324	110.877	–49.572	0.134	–82.969	–49.714	–43.927	7.648
	400.00	75.981	132.663	113.763	–42.146	7.560	–95.211	–50.121	–41.936	5.476
	500.00	79.433	149.988	119.327	–34.376	15.330	–109.370	–50.501	–39.845	4.163
	600.00	82.885	164.776	125.699	–26.260	23.446	–125.125	–50.855	–37.681	3.280
	700.00	86.337	177.812	132.230	–17.799	31.907	–142.267	–56.022	–34.662	2.587
	800.00	89.789	189.566	138.674	–8.992	40.714	–160.645	–56.278	–31.592	2.063
	811.40	90.182	190.839	139.398	–7.966	41.740	–162.813	–56.298	–31.240	2.011

References

Phase	H / S	C _p	Remarks
SOL	Tk1	Tk1,e	Hu1 DPT= 811.4 (peritec.)

MgS

MAGNESIUM SULFIDE

56.371

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	45.584	50.334	50.334	-345.724	0.000	-360.731	-345.724	-341.431	59.817
	300.00	45.626	50.616	50.334	-345.640	0.084	-360.824	-345.728	-341.404	59.444
	400.00	47.616	64.030	52.150	-340.972	4.752	-366.584	-348.193	-339.839	44.378
	500.00	48.966	74.810	55.639	-336.138	9.586	-373.543	-349.930	-337.572	35.266
	600.00	49.883	83.824	59.606	-331.193	14.531	-381.487	-351.347	-334.960	29.161
	700.00	50.542	91.565	63.631	-326.170	19.554	-390.266	-352.538	-332.134	24.784
	800.00	51.042	98.348	67.556	-321.090	24.634	-399.769	-353.840	-329.133	21.490
	900.00	51.442	104.384	71.319	-315.965	29.759	-409.911	-408.062	-324.806	18.851
	1000.00	51.876	109.827	74.902	-310.799	34.925	-420.626	-416.937	-314.802	16.444
	1100.00	52.343	114.793	78.306	-305.588	40.136	-431.860	-416.832	-304.593	14.464
	1200.00	52.807	119.367	81.539	-300.331	45.393	-443.571	-416.686	-294.396	12.815
	1300.00	53.253	123.612	84.614	-295.027	50.697	-455.723	-416.501	-284.212	11.420
	1400.00	53.677	127.574	87.543	-289.681	56.043	-468.284	-543.240	-270.416	10.089
	1500.00	54.086	131.291	90.337	-284.292	61.432	-481.229	-541.794	-250.979	8.740
	1600.00	54.485	134.795	93.007	-278.864	66.860	-494.535	-540.313	-231.639	7.562
	1700.00	54.879	138.110	95.564	-273.396	72.328	-508.182	-538.796	-212.394	6.526
	1800.00	55.272	141.258	98.015	-267.888	77.836	-522.152	-537.243	-193.238	5.608
	1900.00	55.668	144.257	100.371	-262.341	83.383	-536.429	-535.656	-174.170	4.788
	2000.00	56.069	147.122	102.637	-256.754	88.970	-550.999	-534.032	-155.186	4.053
	2100.00	56.476	149.868	104.821	-251.127	94.597	-565.849	-532.372	-136.284	3.390
	2200.00	56.888	152.504	106.929	-245.459	100.265	-580.969	-530.674	-117.463	2.789
	2300.00	57.305	155.042	108.966	-239.749	105.975	-596.347	-528.939	-98.719	2.242
	2400.00	57.725	157.490	110.938	-233.998	111.726	-611.974	-527.166	-80.052	1.742
	2500.00	58.147	159.855	112.847	-228.204	117.520	-627.842	-525.354	-61.459	1.284

References

Phase	H / S	C _p
SOL	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
GAS	298.15	34.580	225.627	225.627	145.227	0.000	77.956	145.227	97.256	–17.039
	300.00	34.668	225.841	225.628	145.291	0.064	77.539	145.203	96.959	–16.882
	400.00	37.953	236.264	227.028	148.921	3.694	54.416	141.701	81.161	–10.599
	500.00	42.948	245.239	229.787	152.953	7.726	30.333	139.161	66.305	–6.927
	600.00	48.418	253.561	233.063	157.526	12.299	5.389	137.372	51.917	–4.520
	700.00	52.676	261.367	236.555	162.595	17.368	–20.362	136.227	37.770	–2.818
	800.00	55.077	268.579	240.114	167.999	22.772	–46.864	135.248	23.772	–1.552
	900.00	55.661	275.116	243.647	173.549	28.322	–74.055	81.453	11.050	–0.641
	1000.00	54.851	280.948	247.091	179.084	33.857	–101.864	72.946	3.960	–0.207
	1100.00	53.291	286.106	250.408	184.494	39.267	–130.222	73.251	–2.955	0.140
	1200.00	51.749	290.674	253.577	189.743	44.516	–159.065	73.387	–9.890	0.431
	1300.00	50.078	294.748	256.590	194.832	49.605	–188.340	73.358	–16.830	0.676
	1400.00	48.585	298.403	259.449	199.763	54.536	–218.001	–53.796	–20.133	0.751
	1500.00	47.279	301.710	262.158	204.555	59.328	–248.009	–52.947	–17.759	0.618
	1600.00	46.161	304.724	264.725	209.226	63.999	–278.333	–52.223	–15.437	0.504
	1700.00	45.217	307.494	267.161	213.793	68.566	–308.946	–51.607	–13.157	0.404
	1800.00	44.426	310.055	269.473	218.274	73.047	–339.825	–51.081	–10.911	0.317
	1900.00	43.764	312.439	271.673	222.683	77.456	–370.951	–50.632	–8.692	0.239
	2000.00	43.212	314.669	273.767	227.031	81.804	–402.308	–50.247	–6.495	0.170
	2100.00	42.752	316.766	275.765	231.328	86.101	–433.880	–49.917	–4.316	0.107
	2200.00	42.368	318.746	277.675	235.583	90.356	–465.657	–49.632	–2.151	0.051
	2300.00	42.048	320.622	279.501	239.804	94.577	–497.626	–49.386	0.002	0.000
	2400.00	41.781	322.405	281.252	243.995	98.768	–529.778	–49.173	2.144	–0.047
	2500.00	41.560	324.106	282.933	248.162	102.935	–562.104	–48.988	4.278	–0.089

References

Phase	H / S	C _p
GAS	Ja1	Ja1

MgSO4

MAGNESIUM SULFATE

120.369

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
SOL	298.15	96.202	91.600	91.600	-1284.898	0.000	-1312.209	-1284.898	-1170.579	205.081
	300.00	96.496	92.196	91.602	-1284.720	0.178	-1312.379	-1284.917	-1169.870	203.692
	400.00	109.905	121.905	95.562	-1274.361	10.537	-1323.123	-1287.632	-1131.332	147.737
	500.00	119.649	147.526	103.452	-1262.861	22.037	-1336.624	-1288.821	-1092.128	114.094
	600.00	127.460	170.051	112.712	-1250.494	34.404	-1352.525	-1289.136	-1052.744	91.650
	700.00	134.264	190.220	122.368	-1237.402	47.496	-1370.556	-1288.767	-1013.368	75.618
	800.00	140.484	208.560	132.013	-1223.660	61.238	-1390.508	-1288.082	-974.070	63.600
	900.00	146.291	225.445	141.468	-1209.319	75.579	-1412.219	-1339.897	-933.721	54.192
	1000.00	151.724	241.143	150.660	-1194.415	90.483	-1435.558	-1345.958	-887.984	46.384
	1100.00	156.757	255.843	159.561	-1178.987	105.911	-1460.415	-1342.655	-842.343	40.000
	1200.00	161.321	269.682	168.166	-1163.079	121.819	-1486.698	-1338.957	-797.021	34.693
	1300.00	165.325	282.757	176.483	-1146.742	138.156	-1514.326	-1334.903	-752.021	30.217
	1400.00	168.664	295.136	184.520	-1130.036	154.862	-1543.226	-1457.510	-703.717	26.256
			10.460		14.644					
LIQ	1400.00	158.992	305.596	184.520	-1115.392	169.506	-1543.226	-1442.866	-703.717	26.256
	1500.00	158.992	316.565	192.962	-1099.493	185.405	-1574.340	-1438.192	-651.085	22.673
	1600.00	158.992	326.826	201.011	-1083.594	201.304	-1606.515	-1433.574	-598.762	19.548
	1700.00	158.992	336.465	208.698	-1067.695	217.203	-1639.685	-1429.009	-546.726	16.799
	1800.00	158.992	345.553	216.051	-1051.795	233.103	-1673.790	-1424.497	-494.957	14.363
	1900.00	158.992	354.149	223.095	-1035.896	249.002	-1708.779	-1420.036	-443.438	12.191
	2000.00	158.992	362.304	229.854	-1019.997	264.901	-1744.605	-1415.626	-392.153	10.242

References

Phase	H / S	C _p
SOL	Nb1	Ja1
LIQ	Ja1	Ja1

MgSe

MAGNESIUM SELENIDE

103.265

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
SOL	298.15	47.976	62.760	62.760	-292.880	0.000	-311.592	-292.880	-289.250	50.675
	300.00	48.007	63.057	62.761	-292.791	0.089	-311.708	-292.884	-289.227	50.359
	400.00	49.714	77.101	64.664	-287.905	4.975	-318.746	-293.217	-287.964	37.604
	500.00	51.421	88.378	68.315	-282.848	10.032	-327.037	-299.639	-286.510	29.931
	600.00	53.128	97.904	72.473	-277.621	15.259	-336.364	-300.713	-283.782	24.705
	700.00	54.836	106.222	76.712	-272.223	20.657	-346.578	-301.734	-280.879	20.959
	800.00	56.543	113.656	80.873	-266.654	26.226	-357.579	-302.702	-277.833	18.141
	900.00	58.250	120.414	84.897	-260.914	31.966	-369.287	-303.617	-274.669	15.941
	1000.00	59.957	126.640	88.764	-255.004	37.876	-381.644	-313.427	-270.648	14.137

References

Phase	H / S	C _p
SOL	Mi1	e

151.263

MAGNESIUM SELENITE

MgSeO3

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	104.598	100.416	100.416	-900.192	0.000	-930.131	-900.192	-816.042	142.967
	300.00	104.709	101.063	100.418	-899.998	0.194	-930.317	-900.173	-815.520	141.995
	400.00	110.679	132.004	104.596	-889.229	10.963	-942.031	-899.079	-787.464	102.832
	500.00	116.650	157.343	112.684	-877.863	22.329	-956.534	-903.780	-759.613	79.356
	600.00	122.620	179.138	121.983	-865.899	34.293	-973.382	-902.857	-730.861	63.627
	700.00	128.591	198.489	131.555	-853.338	46.854	-992.280	-901.598	-702.289	52.405
	800.00	134.562	216.049	141.035	-840.181	60.011	-1013.020	-899.982	-673.923	44.003
	900.00	140.532	232.243	150.281	-826.426	73.766	-1035.445	-897.990	-645.781	37.480
	1000.00	146.503	247.359	159.241	-812.074	88.118	-1059.433	-904.552	-617.124	32.235
	1069.00	150.622	257.270	165.251	-801.824	98.368	-1076.845	-956.361	-594.050	29.027

References

Phase	H / S	C _p	Remarks
SOL	Nb1/Tk1	e	Tk1 MPT= 1069.

76.695

2-MAGNESIUM SILICON

Mg2Si

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	67.838	75.772	75.772	-79.287	0.000	-101.878	-79.287	-76.782	13.452
	300.00	67.988	76.192	75.773	-79.161	0.126	-102.019	-79.291	-76.767	13.366
	400.00	73.778	96.633	78.521	-72.042	7.245	-110.695	-79.396	-75.906	9.912
	500.00	77.262	113.495	83.879	-64.479	14.808	-121.227	-79.450	-75.027	7.838
	600.00	79.839	127.818	90.039	-56.620	22.667	-133.310	-79.540	-74.135	6.454
	700.00	81.987	140.290	96.345	-48.526	30.761	-146.729	-79.704	-73.222	5.464
	800.00	83.907	151.365	102.543	-40.230	39.057	-161.322	-79.961	-72.280	4.719
	900.00	85.695	161.352	108.532	-31.749	47.538	-176.966	-80.321	-71.300	4.138
	1000.00	87.400	170.470	114.276	-23.093	56.194	-193.563	-98.687	-68.757	3.592
	1100.00	89.051	178.878	119.772	-14.271	65.016	-211.036	-99.047	-65.746	3.122
	1200.00	90.665	186.696	125.027	-5.284	74.003	-229.319	-99.287	-62.707	2.730
	1300.00	92.254	194.016	130.055	3.862	83.149	-248.359	-99.410	-59.653	2.397
	1373.00	93.401	199.087	133.591	10.638	89.925	-262.708	-353.993	-55.206	2.100
			62.471		85.772					
LIQ	1373.00	94.140	261.557	133.591	96.410	175.697	-262.708	-268.221	-55.206	2.100
	1400.00	94.140	263.391	136.077	98.952	178.239	-269.795	-267.557	-51.024	1.904
	1500.00	94.140	269.886	144.784	108.366	187.653	-296.463	-265.126	-35.642	1.241
	1600.00	94.140	275.961	152.794	117.780	197.067	-323.758	-262.734	-20.422	0.667
	1700.00	94.140	281.668	160.209	127.194	206.481	-351.642	-310.561	-4.902	0.151
	1800.00	94.140	287.049	167.108	136.608	215.895	-380.081	-308.024	13.004	-0.377
	1900.00	94.140	292.139	173.556	146.022	225.309	-409.043	-305.487	30.770	-0.846
	2000.00	94.140	296.968	179.607	155.436	234.723	-438.500	-302.949	48.402	-1.264

References

Phase	H / S	C _p
SOL	Tk1	Ja1
LIQ	Ku1	Ja1

MgTe

MAGNESIUM TELLURIDE

151.905

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	40.775	74.475	74.475	-209.200	0.000	-231.405	-209.200	-206.905	36.249
	300.00	40.794	74.727	74.476	-209.125	0.075	-231.543	-209.218	-206.890	36.023
	400.00	41.840	86.606	76.089	-204.993	4.207	-239.635	-210.323	-205.954	26.895
	500.00	42.886	96.055	79.168	-200.757	8.443	-248.784	-211.662	-204.712	21.386
	600.00	43.932	103.967	82.659	-196.416	12.784	-258.796	-213.235	-203.178	17.688
	700.00	44.978	110.817	86.203	-191.970	17.230	-269.542	-215.042	-201.363	15.026
	800.00	46.024	116.892	89.667	-187.420	21.780	-280.933	-234.704	-197.392	12.888
	900.00	47.070	122.373	93.001	-182.765	26.435	-292.901	-236.955	-192.593	11.178
	1000.00	48.116	127.386	96.192	-178.006	31.194	-305.392	-248.168	-186.785	9.757
	1100.00	49.162	132.021	99.241	-173.142	36.058	-318.366	-250.333	-180.541	8.573
	1200.00	50.208	136.344	102.155	-168.174	41.026	-331.786	-252.394	-174.105	7.579
	1300.00	51.254	140.404	104.943	-163.101	46.099	-345.626	-254.350	-167.500	6.730
	1400.00	52.300	144.240	107.614	-157.923	51.277	-359.860	-429.604	-154.630	5.769
	1500.00	53.346	147.884	110.178	-152.641	56.559	-374.467	-428.592	-135.024	4.702

References

Phase	H / S	C _p
SOL	Ku1	e

Mg2Th

2-MAGNESIUM THORIUM

280.648

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	76.974	92.466	92.466	-31.380	0.000	-58.949	-31.380	-23.546	4.125
	300.00	77.046	92.943	92.468	-31.238	0.142	-59.120	-31.380	-23.497	4.091
	400.00	80.549	115.601	95.534	-23.353	8.027	-69.593	-31.399	-20.867	2.725
	500.00	83.693	133.917	101.435	-15.139	16.241	-82.098	-31.451	-18.229	1.904
	600.00	86.694	149.442	108.174	-6.619	24.761	-96.284	-31.559	-15.576	1.356
	700.00	89.628	163.027	115.059	2.197	33.577	-111.922	-31.734	-12.899	0.963
	800.00	92.527	175.185	121.828	11.305	42.685	-128.843	-31.980	-10.193	0.666
	900.00	95.405	186.249	128.380	20.702	52.082	-146.922	-32.300	-7.451	0.432
	1000.00	98.270	196.450	134.684	30.386	61.766	-166.064	-50.592	-3.154	0.165
	1100.00	101.126	205.950	140.735	40.356	71.736	-186.189	-50.840	1.603	-0.076

References

Phase	H / S	C _p
SOL	N2,Tk1/Ku1	e

222.184

MAGNESIUM METAVANADATE

Mg(VO3)2

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	165.137	160.699	160.699	–2201.658	0.000	–2249.570	–2201.658	–2039.094	357.241
	300.00	165.377	161.721	160.702	–2201.352	0.306	–2249.869	–2201.654	–2038.086	354.862
	400.00	178.347	211.074	167.344	–2184.166	17.492	–2268.596	–2201.065	–1983.632	259.036
	500.00	191.318	252.264	180.314	–2165.683	35.975	–2291.815	–2199.750	–1929.411	201.564
	600.00	204.288	288.292	195.366	–2145.903	55.755	–2318.878	–2197.679	–1875.525	163.279
	700.00	217.258	320.757	210.996	–2124.825	76.833	–2349.355	–2194.821	–1822.047	135.963
	800.00	230.229	350.614	226.606	–2102.451	99.207	–2382.942	–2191.147	–1769.035	115.506
	900.00	243.199	378.480	241.949	–2078.779	122.879	–2419.412	–2186.641	–1716.533	99.625
	1000.00	256.170	404.775	256.928	–2053.811	147.847	–2458.586	–2190.261	–1663.819	86.909
	1100.00	269.140	429.799	271.515	–2027.546	174.112	–2500.325	–2183.990	–1611.470	76.522
	1200.00	282.110	453.773	285.711	–1999.983	201.675	–2544.511	–2176.760	–1559.735	67.893
	1300.00	295.081	476.867	299.532	–1971.123	230.535	–2591.050	–2168.567	–1508.641	60.618
	1400.00	308.051	499.209	313.001	–1940.967	260.691	–2639.860	–2286.378	–1454.587	54.271
	1500.00	321.022	520.905	326.141	–1909.513	292.145	–2690.870	–2275.088	–1395.561	48.598

References

Phase	H / S	C _p
SOL	Nb1	Ku1,e

262.489

MAGNESIUM PYROVANADATE

Mg2V2O7

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	203.470	200.401	200.401	–2836.375	0.000	–2896.125	–2836.375	–2645.323	463.450
	300.00	203.694	201.660	200.405	–2835.998	0.377	–2896.496	–2836.373	–2644.138	460.385
	400.00	215.786	261.915	208.539	–2815.024	21.351	–2919.791	–2836.033	–2580.098	336.926
	500.00	227.877	311.366	224.298	–2792.841	43.534	–2948.524	–2835.216	–2516.199	262.865
	600.00	239.969	353.981	242.438	–2769.449	66.926	–2981.838	–2833.900	–2452.510	213.510
	700.00	252.061	391.881	261.127	–2744.847	91.528	–3019.164	–2832.050	–2389.084	178.276
	800.00	264.153	426.328	279.655	–2719.037	117.338	–3060.099	–2829.630	–2325.961	151.870
	900.00	276.244	458.139	297.741	–2692.017	144.358	–3104.342	–2826.618	–2263.178	131.351
	1000.00	288.336	487.870	315.283	–2663.788	172.587	–3151.658	–2840.915	–2199.245	114.877
	1100.00	300.428	515.918	332.259	–2634.350	202.025	–3201.860	–2836.489	–2135.285	101.396
	1200.00	312.520	542.578	348.684	–2603.702	232.673	–3254.795	–2831.212	–2071.766	90.182
	1300.00	324.611	568.070	364.586	–2571.846	264.529	–3310.337	–2825.077	–2008.722	80.711
	1400.00	336.703	592.569	380.001	–2538.780	297.595	–3368.376	–3072.013	–1938.925	72.342
	1500.00	348.795	616.211	394.965	–2504.505	331.870	–3428.822	–3061.800	–1858.341	64.713

References

Phase	H / S	C _p
SOL	Nb1	Ku1,e

MgWO₄**MAGNESIUM TUNGSTATE**

272.153

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	109.139	101.169	101.169	-1515.863	0.000	-1546.027	-1515.863	-1404.217	246.013
	300.00	109.527	101.845	101.171	-1515.661	0.202	-1546.214	-1515.860	-1403.524	244.375
	400.00	123.612	135.540	105.670	-1503.915	11.948	-1558.131	-1515.073	-1366.168	178.403
	500.00	131.353	164.017	114.569	-1491.139	24.724	-1573.147	-1513.599	-1329.104	138.851
	600.00	136.960	188.480	124.896	-1477.713	38.150	-1590.801	-1511.836	-1292.367	112.511
	700.00	141.748	209.958	135.545	-1463.773	52.090	-1610.744	-1509.911	-1255.939	93.719
	800.00	146.225	229.180	146.068	-1449.373	66.490	-1632.718	-1507.852	-1219.797	79.645
	900.00	150.605	246.656	156.288	-1434.532	81.331	-1656.522	-1505.650	-1183.920	68.713
	1000.00	154.985	262.751	166.140	-1419.252	96.611	-1682.003	-1512.234	-1147.540	59.941
	1100.00	159.406	277.729	175.611	-1403.533	112.330	-1709.035	-1509.576	-1111.197	52.766
	1200.00	163.879	291.791	184.713	-1387.369	128.494	-1737.518	-1506.598	-1075.109	46.798
	1300.00	168.402	305.086	193.465	-1370.756	145.107	-1767.368	-1503.284	-1039.284	41.759
	1400.00	172.962	317.733	201.893	-1353.688	162.175	-1798.514	-1626.586	-1000.098	37.314
	1500.00	177.540	329.822	210.022	-1336.163	179.700	-1830.896	-1621.385	-955.529	33.274
	1600.00	182.115	341.426	217.874	-1318.180	197.683	-1864.462	-1615.824	-911.318	29.751
	1700.00	186.664	352.604	225.473	-1299.741	216.122	-1899.167	-1609.904	-867.465	26.654
	1800.00	191.162	363.401	232.837	-1280.849	235.014	-1934.970	-1603.625	-823.972	23.911
	1900.00	195.582	373.855	239.986	-1261.511	254.352	-1971.836	-1596.998	-780.837	21.467
	2000.00	199.898	383.998	246.934	-1241.736	274.127	-2009.731	-1590.033	-738.060	19.276

References

Phase	H / S	C _p
SOL	Ja1	Ja1

54.938

MANGANESE

Mn

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL–A	298.15	26.328	32.008	32.008	0.000	0.000	–9.543	0.000	0.000	0.000
	300.00	26.363	32.171	32.008	0.049	0.049	–9.602	0.000	0.000	0.000
	400.00	28.235	40.011	33.065	2.779	2.779	–13.226	0.000	0.000	0.000
	500.00	30.108	46.513	35.121	5.696	5.696	–17.561	0.000	0.000	0.000
	600.00	31.981	52.168	37.501	8.800	8.800	–22.500	0.000	0.000	0.000
	700.00	33.430	57.214	39.963	12.076	12.076	–27.974	0.000	0.000	0.000
	800.00	34.776	61.766	42.409	15.486	15.486	–33.927	0.000	0.000	0.000
	900.00	36.122	65.940	44.794	19.031	19.031	–40.315	0.000	0.000	0.000
	980.00	37.199	69.061	46.649	21.964	21.964	–45.716	0.000	0.000	0.000
SOL–B			2.271		2.226					
	980.00	37.596	71.333	46.649	24.190	24.190	–45.716	0.000	0.000	0.000
	1000.00	37.681	72.093	47.150	24.943	24.943	–47.150	0.000	0.000	0.000
	1100.00	38.106	75.704	49.584	28.732	28.732	–54.543	0.000	0.000	0.000
	1200.00	38.530	79.038	51.902	32.564	32.564	–62.282	0.000	0.000	0.000
	1300.00	38.955	82.139	54.110	36.438	36.438	–70.343	0.000	0.000	0.000
	1360.00	39.210	83.902	55.385	38.783	38.783	–75.324	0.000	0.000	0.000
SOL–C			1.560		2.121					
	1360.00	43.095	85.462	55.385	40.904	40.904	–75.324	0.000	0.000	0.000
	1400.00	43.430	86.716	56.263	42.635	42.635	–78.768	0.000	0.000	0.000
	1410.00	43.514	87.025	56.480	43.069	43.069	–79.637	0.000	0.000	0.000
SOL–D			1.333		1.879					
	1410.00	45.232	88.358	56.480	44.948	44.948	–79.637	0.000	0.000	0.000
	1500.00	45.976	91.180	58.478	49.053	49.053	–87.717	0.000	0.000	0.000
	1517.00	46.116	91.699	58.847	49.835	49.835	–89.271	0.000	0.000	0.000
LIQ			7.949		12.058					
	1517.00	46.024	99.647	58.847	61.893	61.893	–89.271	0.000	0.000	0.000
	1600.00	46.024	102.099	61.028	65.713	65.713	–97.645	0.000	0.000	0.000
	1700.00	46.024	104.889	63.527	70.316	70.316	–107.995	0.000	0.000	0.000
	1800.00	46.024	107.520	65.898	74.918	74.918	–118.617	0.000	0.000	0.000
	1900.00	46.024	110.008	68.155	79.521	79.521	–129.495	0.000	0.000	0.000
	2000.00	46.024	112.369	70.307	84.123	84.123	–140.614	0.000	0.000	0.000
	2100.00	46.024	114.614	72.364	88.725	88.725	–151.964	0.000	0.000	0.000
	2200.00	46.024	116.755	74.334	93.328	93.328	–163.534	0.000	0.000	0.000
	2300.00	46.024	118.801	76.223	97.930	97.930	–175.312	0.000	0.000	0.000
	2332.00	46.024	119.437	76.811	99.403	99.403	–179.124	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL–A	Hu1	Hu1	
SOL–B	Hu1	Hu1	
SOL–C	Hu1	Hu1	
SOL–D	Hu1	Hu1	
LIQ	Hu1	Hu1	Hu1 BPT= 2332., L= 226.7 kJ

Mn[g]

MANGANESE (GAS)

54.938

Phase	T [K]	C _p [————— J / (K mol)]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	20.786	173.712	173.712	283.257	0.000	231.465	283.257	241.008	-42.224
	300.00	20.786	173.841	173.712	283.295	0.038	231.143	283.247	240.746	-41.918
	400.00	20.786	179.820	174.528	285.374	2.117	213.446	282.595	226.672	-29.600
	500.00	20.786	184.459	176.067	287.453	4.196	195.223	281.757	212.784	-22.229
	600.00	20.786	188.248	177.791	289.531	6.274	176.582	280.731	199.083	-17.332
	700.00	20.786	191.453	179.520	291.610	8.353	157.593	279.534	185.567	-13.847
	800.00	20.786	194.228	181.189	293.689	10.432	138.306	278.202	172.233	-11.246
	900.00	20.786	196.676	182.776	295.767	12.510	118.758	276.736	159.073	-9.232
	1000.00	20.786	198.866	184.278	297.846	14.589	98.979	272.903	146.130	-7.633
	1100.00	20.786	200.848	185.695	299.924	16.667	78.992	271.192	133.535	-6.341
	1200.00	20.786	202.656	187.035	302.003	18.746	58.815	269.439	121.097	-5.271
	1300.00	20.786	204.320	188.301	304.082	20.825	38.466	267.643	108.808	-4.372
	1400.00	20.786	205.860	189.501	306.160	22.903	17.956	263.526	96.723	-3.609
	1500.00	20.786	207.295	190.640	308.239	24.982	-2.703	259.186	85.014	-2.960
	1600.00	20.792	208.636	191.723	310.318	27.061	-23.500	244.604	74.144	-2.421
	1700.00	20.795	209.897	192.756	312.397	29.140	-44.428	242.081	63.568	-1.953
	1800.00	20.798	211.085	193.741	314.477	31.220	-65.477	239.558	53.140	-1.542
	1900.00	20.806	212.210	194.684	316.557	33.300	-86.643	237.036	42.852	-1.178
	2000.00	20.820	213.278	195.587	318.638	35.381	-107.917	234.515	32.697	-0.854
	2100.00	20.845	214.294	196.454	320.721	37.464	-129.296	231.996	22.668	-0.564
	2200.00	20.881	215.265	197.287	322.807	39.550	-150.775	229.480	12.759	-0.303
	2300.00	20.931	216.194	198.089	324.898	41.641	-172.348	226.968	2.964	-0.067
	2400.00	20.995	217.086	198.862	326.994	43.737	-194.012	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

129.860

MANGANESE ARSENIDE

MnAs

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-3	298.15	70.164	77.069	77.069	-56.902	0.000	-79.880	-56.902	-59.691	10.458
	300.00	70.182	77.503	77.071	-56.772	0.130	-80.023	-56.867	-59.709	10.396
	315.65	70.340	81.076	77.181	-55.673	1.229	-81.264	-56.569	-59.865	9.907
			10.366		3.272					
SOL-2	315.65	70.340	91.442	77.181	-52.401	4.501	-81.264	-53.297	-59.865	9.907
	393.00	71.116	106.941	81.566	-46.930	9.972	-88.958	-51.886	-61.636	8.192
			0.064		0.025					
SOL-1	393.00	71.116	107.004	81.566	-46.905	9.997	-88.958	-51.861	-61.636	8.192
	400.00	71.187	108.261	82.022	-46.407	10.495	-89.711	-51.737	-61.811	8.072
	500.00	72.191	124.253	88.925	-39.238	17.664	-101.365	-50.053	-64.528	6.741
	600.00	73.195	137.504	95.948	-31.969	24.933	-114.471	-48.510	-67.570	5.883
	700.00	74.199	148.862	102.715	-24.599	32.303	-128.803	-47.094	-70.860	5.288
	800.00	75.203	158.836	109.119	-17.129	39.773	-144.198	-45.766	-74.347	4.854
	900.00	76.207	167.752	115.147	-9.558	47.344	-160.535	-44.523	-77.995	4.527
	1000.00	77.212	175.833	120.818	-1.887	55.015	-177.720	-45.573	-81.732	4.269
	1100.00	78.216	183.239	126.161	5.884	62.786	-195.679	-44.429	-85.404	4.055
	1200.00	79.220	190.088	131.206	13.756	70.658	-214.349	-43.339	-89.178	3.882
	1209.00	79.310	190.680	131.647	14.469	71.371	-216.063	-43.249	-89.522	3.868

References

Phase	H / S	C _p	Remarks
SOL-3	Tk1	e	
SOL-2	Tk1	e	
SOL-1	Tk1	e	Tk1 MPT= 1209.

442.653

MANGANESE ARSENATE

Mn3(AsO4)2

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	261.785	319.616	319.616	-2366.261	0.000	-2461.554	-2366.261	-2166.975	379.645
	300.00	262.389	321.237	319.621	-2365.776	0.485	-2462.147	-2366.231	-2165.739	377.089
	400.00	286.357	400.338	330.243	-2338.223	28.038	-2498.358	-2363.765	-2099.241	274.133
	500.00	301.629	465.970	351.013	-2308.782	57.479	-2541.767	-2360.445	-2033.485	212.437
	600.00	313.477	522.045	374.957	-2278.008	88.253	-2591.235	-2356.867	-1968.428	171.367
	700.00	323.710	571.150	399.548	-2246.140	120.121	-2645.945	-2353.200	-1903.975	142.076
	800.00	333.081	614.995	423.787	-2213.295	152.966	-2705.291	-2349.398	-1840.058	120.143
	862.00	338.625	640.062	438.450	-2192.471	173.790	-2744.205	-2346.975	-1800.676	109.116

References

Phase	H / S	C _p
SOL	G1	G1

MnB

MANGANESE MONOBORIDE

65.749

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
SOL	298.15	35.818	32.426	32.426	-75.312	0.000	-84.980	-75.312	-73.699	12.912
	300.00	35.987	32.648	32.427	-75.246	0.066	-85.040	-75.315	-73.689	12.830
	400.00	42.499	43.994	33.929	-71.286	4.026	-88.884	-75.451	-73.125	9.549
	500.00	46.367	53.921	36.958	-66.830	8.482	-93.791	-75.642	-72.524	7.577
	600.00	49.195	62.635	40.526	-62.046	13.266	-99.628	-75.944	-71.874	6.257
	700.00	51.531	70.399	44.249	-57.007	18.305	-106.286	-76.335	-71.165	5.310
	800.00	53.605	77.417	47.963	-51.749	23.563	-113.683	-76.770	-70.397	4.596
	900.00	55.527	83.843	51.598	-46.291	29.021	-121.750	-77.240	-69.573	4.038
	1000.00	57.354	89.788	55.123	-40.647	34.665	-130.435	-79.969	-68.649	3.586
	1100.00	59.120	95.338	58.530	-34.823	40.489	-139.694	-80.464	-67.492	3.205
	1200.00	60.843	100.556	61.816	-28.824	46.488	-149.492	-80.886	-66.294	2.886

References

Phase	H / S	C _p	Remarks
SOL	Ku1	e	Tk1 MPT= 2163.

MnB2

MANGANESE DIBORIDE

76.560

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
SOL	298.15	53.623	34.518	34.518	-94.140	0.000	-104.432	-94.140	-91.412	16.015
	300.00	53.706	34.850	34.519	-94.041	0.099	-104.496	-94.131	-91.395	15.913
	400.00	58.191	50.914	36.679	-88.446	5.694	-108.812	-93.996	-90.520	11.821
	500.00	62.676	64.381	40.906	-82.403	11.737	-114.593	-94.331	-89.619	9.362
	600.00	67.162	76.205	45.823	-75.911	18.229	-121.634	-94.905	-88.626	7.716
	700.00	71.647	86.895	50.938	-68.970	25.170	-129.797	-95.550	-87.528	6.531
	800.00	76.132	96.755	56.056	-61.581	32.559	-138.985	-96.138	-86.341	5.637
	900.00	80.617	105.981	61.096	-53.744	40.396	-149.126	-96.609	-85.086	4.938
	1000.00	85.103	114.707	66.024	-45.458	48.682	-160.164	-99.160	-83.742	4.374
	1100.00	89.588	123.028	70.831	-36.723	57.417	-172.054	-99.275	-82.192	3.903
	1200.00	94.073	131.016	75.516	-27.540	66.600	-184.759	-99.101	-80.645	3.510

References

Phase	H / S	C _p	Remarks
SOL	Ku1	e	Tk1 MPT= 2261.

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _r [— —]
SOL	298.15	75.304	142.256	142.256	–385.765	0.000	–428.179	–385.765	–373.254	65.393
	300.00	75.350	142.722	142.257	–385.626	0.139	–428.442	–385.814	–373.176	64.976
	400.00	77.831	164.738	145.243	–377.967	7.798	–443.862	–415.367	–362.820	47.379
	500.00	80.312	182.372	150.961	–370.059	15.706	–461.246	–414.070	–349.832	36.547
	600.00	82.793	197.234	157.466	–361.904	23.861	–480.245	–412.737	–337.109	29.348
	700.00	85.274	210.183	164.092	–353.501	32.264	–500.629	–411.345	–324.613	24.223
	800.00	87.755	221.732	170.588	–344.849	40.916	–522.235	–409.851	–312.324	20.393
	900.00	90.236	232.211	176.861	–335.950	49.815	–544.940	–408.254	–300.228	17.425
	971.00	91.998	239.129	181.164	–329.481	56.284	–561.675	–407.056	–291.752	15.695
LIQ			34.472		33.472					
	971.00	100.416	273.601	181.164	–296.009	89.756	–561.675	–373.584	–291.752	15.695
	1000.00	100.416	276.556	183.887	–293.096	92.669	–569.652	–375.078	–289.273	15.110
	1100.00	100.416	286.127	192.754	–283.055	102.710	–597.794	–372.598	–280.813	13.335
	1200.00	100.416	294.864	200.904	–273.013	112.752	–626.850	–370.168	–272.576	11.865
	1300.00	100.416	302.902	208.445	–262.972	122.793	–656.744	–367.786	–264.541	10.629

References

Phase	H / S	C _p
SOL	Tk1	e
LIQ	Br1,e	e

MnBr2[g]

MANGANESE DIBROMIDE (GAS)

214.746

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	55.596	318.093	318.093	-175.310	0.000	-270.150	-175.310	-215.225	37.707
	300.00	55.663	318.438	318.094	-175.207	0.103	-270.738	-175.396	-215.473	37.517
	400.00	58.059	334.825	320.313	-169.505	5.805	-303.435	-206.906	-222.393	29.041
	500.00	59.254	347.922	324.569	-163.634	11.676	-337.594	-207.644	-226.181	23.629
	600.00	59.975	358.793	329.393	-157.670	17.640	-372.946	-208.502	-229.810	20.007
	700.00	60.473	368.078	334.272	-151.646	23.664	-409.301	-209.490	-233.285	17.408
	800.00	60.853	376.179	339.015	-145.579	29.731	-446.522	-210.581	-236.611	15.449
	900.00	61.163	383.365	343.551	-139.478	35.832	-484.506	-211.782	-239.794	13.917
	1000.00	61.429	389.823	347.861	-133.348	41.962	-523.171	-215.329	-242.791	12.682
	1100.00	61.668	395.689	351.946	-127.193	48.117	-562.451	-216.736	-245.470	11.656
	1200.00	61.888	401.065	355.819	-121.015	54.295	-602.292	-218.169	-248.019	10.796
	1300.00	62.094	406.027	359.492	-114.815	60.495	-642.650	-219.630	-250.447	10.063
	1400.00	62.291	410.635	362.983	-108.596	66.714	-683.486	-223.399	-252.697	9.428
	1500.00	62.480	414.940	366.305	-102.358	72.952	-724.767	-227.375	-254.598	8.866
	1600.00	62.664	418.978	369.472	-96.100	79.210	-766.465	-241.581	-255.683	8.347
	1700.00	62.843	422.782	372.497	-89.825	85.485	-808.555	-243.716	-256.499	7.881
	1800.00	63.020	426.379	375.391	-83.532	91.778	-851.014	-245.838	-257.189	7.463
	1900.00	63.193	429.791	378.165	-77.221	98.089	-893.824	-247.948	-257.762	7.086
	2000.00	63.365	433.037	380.829	-70.893	104.417	-936.967	-250.046	-258.225	6.744

References

Phase	H / S	C _p
GAS	Tk1	e

Mn3C

TRIMANGANESE CARBIDE

176.825

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-A	298.15	93.433	98.701	98.701	4.602	0.000	-24.826	4.602	5.515	-0.966
	300.00	93.712	99.279	98.702	4.775	0.173	-25.009	4.613	5.521	-0.961
	400.00	104.333	127.864	102.528	14.737	10.135	-36.409	5.348	5.717	-0.747
	500.00	110.508	151.856	110.060	25.500	20.898	-50.428	6.029	5.726	-0.598
	600.00	114.932	172.412	118.780	36.781	32.179	-66.666	6.416	5.623	-0.490
	700.00	118.530	190.407	127.754	48.459	43.857	-84.826	6.489	5.483	-0.409
	800.00	121.688	206.444	136.606	60.473	55.871	-104.682	6.348	5.346	-0.349
	900.00	124.589	220.946	145.184	72.788	68.186	-126.063	5.996	5.240	-0.304
	1000.00	127.332	234.216	153.433	85.385	80.783	-148.831	-1.261	5.320	-0.278
	1100.00	129.970	246.477	161.341	98.251	93.649	-172.873	-1.952	6.012	-0.286
	1200.00	132.538	257.896	168.917	111.377	106.775	-198.098	-2.567	6.764	-0.294

References

Phase	H / S	C _p
SOL-A	Nb1	A1

420.599

HEPTAMANGANESE TRICARBIDE

Mn7C3

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	235.772	238.906	238.906	-109.202	0.000	-180.432	-109.202	-108.496	19.008
	300.00	236.036	240.366	238.911	-108.766	0.436	-180.875	-109.154	-108.492	18.890
	400.00	248.562	310.051	248.328	-84.513	24.689	-208.533	-107.121	-108.606	14.183
	500.00	259.352	366.694	266.507	-59.109	50.093	-242.455	-106.131	-109.114	11.399
	600.00	269.459	414.879	287.317	-32.664	76.538	-281.592	-106.159	-109.724	9.552
	700.00	279.244	457.154	308.619	-5.227	103.975	-325.235	-106.986	-110.259	8.228
	800.00	288.859	495.071	329.595	23.179	132.381	-372.878	-108.224	-110.647	7.224
	900.00	298.374	529.644	349.929	52.541	161.743	-424.138	-109.774	-110.859	6.434
	1000.00	307.827	561.571	369.517	82.852	192.054	-478.719	-127.202	-110.567	5.775
	1100.00	317.242	591.351	388.345	114.105	223.307	-536.381	-129.041	-108.811	5.167

References

Phase	H / S	C _p
SOL	Pa3	Pa3

872.115

15-MANGANESE 4-CARBID

Mn15C4

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	447.985	135.980	135.980	-175.728	0.000	-216.270	-175.728	-66.278	11.612
	300.00	448.486	138.753	135.989	-174.899	0.829	-216.525	-175.693	-65.599	11.422
	400.00	472.284	271.160	153.881	-128.816	46.912	-237.280	-174.707	-29.098	3.800
	500.00	492.788	378.785	188.423	-80.547	95.181	-269.939	-175.520	7.360	-0.769
	600.00	511.995	470.341	227.963	-30.301	145.427	-312.506	-178.161	44.154	-3.844
	700.00	530.590	550.668	268.439	21.832	197.560	-363.635	-182.276	81.520	-6.083
	800.00	548.858	622.713	308.295	75.806	251.534	-422.364	-187.152	119.530	-7.805
	900.00	566.937	688.405	346.932	131.597	307.325	-487.967	-192.665	158.190	-9.181
	1000.00	584.897	749.068	384.150	189.190	364.918	-559.878	-232.223	198.177	-10.352
	1100.00	602.781	805.654	419.924	248.574	424.302	-637.645	-238.435	241.525	-11.469
	1200.00	620.613	858.867	454.307	309.744	485.472	-720.896	-243.725	285.399	-12.423
	1300.00	638.407	909.246	487.381	372.696	548.424	-809.324	-248.054	329.675	-13.246
	1400.00	656.175	957.207	519.241	437.425	613.153	-902.665	-285.588	375.217	-14.000

References

Phase	H / S	C _p
SOL	Pa3	Pa3

MnCO3

MANGANESE CARBONATE

114.947

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	81.499	85.801	85.801	-894.100	0.000	-919.682	-894.100	-816.680	143.079
	300.00	81.843	86.306	85.803	-893.949	0.151	-919.841	-894.095	-816.200	142.113
	400.00	95.273	111.887	89.200	-885.025	9.075	-929.780	-893.395	-790.321	103.205
	500.00	103.579	134.094	96.009	-875.058	19.042	-942.105	-892.264	-764.679	79.885
	600.00	109.869	153.554	104.012	-864.375	29.725	-956.507	-891.005	-739.279	64.360
	700.00	115.206	170.900	112.350	-853.115	40.985	-972.745	-889.681	-714.094	53.286

References

Phase	H / S	C _p
SOL	Nb1	Ku1,e

MnCl2

MANGANESE DICHLORIDE

125.843

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	73.010	118.240	118.240	-481.290	0.000	-516.543	-481.290	-440.478	77.170
	300.00	73.104	118.692	118.241	-481.155	0.135	-516.762	-481.266	-440.225	76.650
	400.00	76.929	140.294	121.161	-473.637	7.653	-529.754	-479.945	-426.742	55.727
	500.00	79.518	157.751	126.788	-465.808	15.482	-544.684	-478.605	-413.596	43.208
	600.00	81.620	172.440	133.205	-457.749	23.541	-561.213	-477.285	-400.719	34.886
	700.00	83.492	185.164	139.738	-449.492	31.798	-579.107	-475.981	-388.060	28.957
	800.00	85.241	196.428	146.134	-441.055	40.235	-598.197	-474.659	-375.590	24.524
	900.00	86.919	206.565	152.294	-432.446	48.844	-618.355	-473.321	-363.287	21.085
	923.00	87.299	208.764	153.674	-430.443	50.847	-623.131	-473.011	-360.479	20.400
			40.843		37.698					
LIQ	923.00	94.307	249.606	153.674	-392.745	88.545	-623.131	-435.313	-360.479	20.400
	1000.00	94.307	257.163	161.356	-385.483	95.807	-642.646	-436.011	-354.253	18.504
	1100.00	94.307	266.151	170.481	-376.052	105.238	-668.819	-434.123	-346.169	16.438
	1200.00	94.307	274.357	178.800	-366.622	114.668	-695.850	-432.288	-338.255	14.724
	1300.00	94.307	281.906	186.445	-357.191	124.099	-723.668	-430.505	-330.491	13.279
	1400.00	94.307	288.895	193.516	-347.760	133.530	-752.213	-431.051	-322.799	12.044
	1500.00	94.307	295.401	200.094	-338.329	142.961	-781.431	-431.827	-314.986	10.969

References

Phase	H / S	C _p
SOL	Nb1	Pa2
LIQ	Pa2	Pa2

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [————— kJ / mol —————]	H–H298	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
GAS	298.15	53.823	289.856	289.856	–263.600	0.000	–350.020	–263.600	–273.955	47.996
	300.00	53.889	290.189	289.857	–263.500	0.100	–350.557	–263.612	–274.019	47.711
	400.00	56.252	306.061	292.005	–257.977	5.623	–380.402	–264.286	–277.389	36.223
	500.00	57.413	318.751	296.128	–252.288	11.312	–411.664	–265.085	–280.576	29.312
	600.00	58.101	329.284	300.801	–246.510	17.090	–444.081	–266.046	–283.586	24.688
	700.00	58.566	338.277	305.528	–240.675	22.925	–477.470	–267.164	–286.423	21.373
	800.00	58.911	346.121	310.122	–234.801	28.799	–511.698	–268.405	–289.091	18.876
	900.00	59.188	353.077	314.516	–228.896	34.704	–546.664	–269.770	–291.596	16.924
	1000.00	59.421	359.325	318.690	–222.965	40.635	–582.290	–273.492	–293.897	15.352
	1100.00	59.627	364.998	322.646	–217.012	46.588	–618.510	–275.083	–295.861	14.049
	1200.00	59.813	370.195	326.395	–211.040	52.560	–655.274	–276.707	–297.678	12.958
	1300.00	59.986	374.989	329.951	–205.050	58.550	–692.536	–278.364	–299.359	12.028
	1400.00	60.149	379.440	333.329	–199.043	64.557	–730.260	–282.335	–300.846	11.225
	1500.00	60.304	383.596	336.543	–193.021	70.579	–768.414	–286.519	–301.969	10.515
	1600.00	60.455	387.492	339.607	–186.983	76.617	–806.970	–300.937	–302.262	9.868
	1700.00	60.601	391.162	342.532	–180.930	82.670	–845.905	–303.290	–302.273	9.288
	1800.00	60.744	394.630	345.331	–174.863	88.737	–885.196	–305.636	–302.145	8.768
	1900.00	60.884	397.918	348.013	–168.781	94.819	–924.825	–307.974	–301.888	8.299
	2000.00	61.022	401.044	350.587	–162.686	100.914	–964.774	–310.306	–301.507	7.875

References

Phase	H / S	C _p
GAS	Nb1/e	e

MnF2

MANGANESE DIFLUORIDE

92.935

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL-A	298.15	67.791	93.094	93.094	-849.352	0.000	-877.108	-849.352	-807.102	141.401
	300.00	67.916	93.514	93.095	-849.226	0.126	-877.281	-849.333	-806.839	140.483
	400.00	72.913	113.804	95.828	-842.161	7.191	-887.683	-848.212	-792.840	103.534
	500.00	76.142	130.440	101.137	-834.700	14.652	-899.920	-847.031	-779.134	81.396
	600.00	78.675	144.553	107.226	-826.956	22.396	-913.688	-845.864	-765.664	66.657
	700.00	80.878	156.849	113.455	-818.976	30.376	-928.771	-844.710	-752.389	56.144
	800.00	82.907	167.783	119.575	-810.786	38.566	-945.012	-843.536	-739.280	48.270
	900.00	84.834	177.660	125.489	-802.398	46.954	-962.292	-842.341	-726.319	42.154
	1000.00	86.697	186.695	131.164	-793.821	55.531	-980.516	-843.356	-713.447	37.267
	1023.00	87.119	188.671	132.435	-791.822	57.530	-984.833	-843.075	-710.463	36.276
SOL-B			2.045		2.092					
	1023.00	87.368	190.716	132.435	-789.730	59.622	-984.833	-840.983	-710.463	36.276
	1100.00	89.014	197.116	136.741	-782.939	66.413	-999.767	-839.970	-700.675	33.272
	1173.00	90.574	202.885	140.679	-776.385	72.967	-1014.368	-838.928	-691.465	30.791
LIQ			24.968		29.288					
	1173.00	92.048	227.853	140.679	-747.097	102.255	-1014.368	-809.640	-691.465	30.791
	1200.00	92.048	229.948	142.664	-744.611	104.741	-1020.549	-809.202	-688.749	29.980
	1300.00	92.048	237.316	149.665	-735.406	113.946	-1043.917	-807.618	-678.776	27.274

References

Phase	H / S	C _p
SOL-A	Pa2	Pa2
SOL-B	Pa2	Pa2
LIQ	Pa2	e

MnF2[g]

MANGANESE DIFLUORIDE (GAS)

92.935

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	52.928	272.471	272.471	-531.368	0.000	-612.605	-531.368	-542.599	95.061
	300.00	53.019	272.799	272.472	-531.270	0.098	-613.110	-531.377	-542.669	94.487
	400.00	56.307	288.564	274.599	-525.782	5.586	-641.208	-531.832	-546.364	71.348
	500.00	57.968	301.324	278.710	-520.061	11.307	-670.723	-532.391	-549.936	57.451
	600.00	58.990	311.990	283.392	-514.209	17.159	-701.403	-533.117	-553.380	48.176
	700.00	59.710	321.140	288.146	-508.272	23.096	-733.070	-534.006	-556.688	41.541
	800.00	60.269	329.151	292.782	-502.272	29.096	-765.593	-535.022	-559.861	36.555
	900.00	60.735	336.277	297.226	-496.222	35.146	-798.871	-536.164	-562.898	32.670
	1000.00	61.142	342.698	301.457	-490.127	41.241	-832.825	-539.662	-565.757	29.552
	1100.00	61.511	348.543	305.476	-483.995	47.373	-867.392	-541.025	-568.300	26.986
	1200.00	61.854	353.910	309.292	-477.826	53.542	-902.518	-542.417	-570.719	24.843

References

Phase	H / S	C _p
GAS	Pa2	Pa2

111.933

MANGANESE TRIFLUORIDE

MnF3

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	91.238	97.069	97.069	-1071.104	0.000	-1100.045	-1071.104	-999.807	175.162
	300.00	91.295	97.633	97.071	-1070.935	0.169	-1100.225	-1071.071	-999.365	174.005
	400.00	94.391	124.321	100.688	-1061.651	9.453	-1111.379	-1069.337	-975.727	127.417
	500.00	97.487	145.717	107.623	-1052.057	19.047	-1124.915	-1067.705	-952.515	99.509
	600.00	100.583	163.764	115.513	-1042.153	28.951	-1140.412	-1066.115	-929.627	80.931
	700.00	103.680	179.502	123.554	-1031.940	39.164	-1157.592	-1064.503	-907.006	67.682
	800.00	106.776	193.548	131.440	-1021.418	49.686	-1176.256	-1062.800	-884.621	57.760
	900.00	109.872	206.304	139.060	-1010.585	60.519	-1196.258	-1060.984	-862.456	50.056
	1000.00	112.968	218.040	146.379	-999.443	71.661	-1217.483	-1061.274	-840.455	43.901

References

Phase	H / S	C _p
SOL	Tk1	e

308.747

MANGANESE DIIODIDE

MnI2

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	75.341	171.544	171.544	-266.102	0.000	-317.248	-266.102	-273.077	47.842
	300.00	75.391	172.010	171.545	-265.963	0.139	-317.566	-266.112	-273.120	47.554
	400.00	78.124	194.073	174.535	-258.287	7.815	-335.916	-282.805	-274.805	35.886
	500.00	80.856	211.799	180.271	-250.338	15.764	-356.238	-325.967	-268.653	28.066
	600.00	83.588	226.783	186.805	-242.116	23.986	-378.185	-324.600	-257.317	22.401
	700.00	86.320	239.873	193.471	-233.620	32.482	-401.531	-323.143	-246.217	18.373
	800.00	89.052	251.578	200.015	-224.852	41.250	-426.114	-321.557	-235.334	15.366
	900.00	91.784	262.224	206.344	-215.810	50.292	-451.812	-319.840	-224.658	13.039
	911.00	92.085	263.341	207.026	-214.799	51.303	-454.702	-319.643	-223.496	12.815
			45.928		41.840					
LIQ	911.00	108.784	309.269	207.026	-172.959	93.143	-454.702	-277.803	-223.496	12.815
	1000.00	108.784	319.409	216.584	-163.277	102.825	-482.686	-277.007	-218.289	11.402
	1100.00	108.784	329.777	226.410	-152.398	113.704	-515.153	-273.712	-212.577	10.094
	1200.00	108.784	339.242	235.424	-141.520	124.582	-548.611	-270.467	-207.163	9.018

References

Phase	H / S	C _p	Remarks
SOL	Tk1	e	
LIQ	Br1	e	Br1 NBPT= 1290.

MnMoO4

MANGANESE MOLYBDATE

214.876

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	124.078	135.980	135.980	-1191.310	0.000	-1231.852	-1191.310	-1091.455	191.218
	300.00	124.173	136.748	135.982	-1191.080	0.230	-1232.105	-1191.282	-1090.836	189.931
	400.00	129.302	173.173	140.914	-1178.407	12.903	-1247.676	-1189.734	-1057.585	138.106
	500.00	134.432	202.577	150.396	-1165.220	26.090	-1266.508	-1188.132	-1024.732	107.053
	600.00	139.562	227.540	161.224	-1151.520	39.790	-1288.044	-1186.474	-992.207	86.379
	700.00	144.691	249.439	172.292	-1137.308	54.002	-1311.915	-1184.718	-959.965	71.633
	800.00	149.821	269.094	183.184	-1122.582	68.728	-1337.857	-1182.797	-927.987	60.591
	900.00	154.950	287.037	193.741	-1107.343	83.967	-1365.677	-1180.681	-896.261	52.018
	1000.00	160.080	303.628	203.910	-1091.592	99.718	-1395.220	-1180.578	-864.736	45.169

References

Phase	H / S	C _p
SOL	Nb1/e	e

Mn4N

TETRAMANGANESE MONONITRIDE

233.759

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	124.796	142.925	142.925	-128.650	0.000	-171.263	-128.650	-104.527	18.313
	300.00	125.152	143.698	142.928	-128.419	0.231	-171.528	-128.641	-104.377	18.174
	400.00	139.910	181.938	148.041	-115.091	13.559	-187.866	-127.691	-96.412	12.590
	500.00	147.026	214.035	158.123	-100.694	27.956	-207.711	-126.432	-88.740	9.271
	600.00	149.493	241.112	169.760	-85.839	42.811	-230.506	-125.487	-81.299	7.078

References

Phase	H / S	C _p
SOL	Nb1/Pa3	Pa3

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [—]
SOL	298.15	175.724	187.443	187.443	–204.200	0.000	–260.086	–204.200	–155.243	27.198
	300.00	176.021	188.531	187.447	–203.875	0.325	–260.434	–204.172	–154.939	26.977
	400.00	192.087	241.370	194.543	–185.469	18.731	–282.017	–202.334	–138.787	18.124
	500.00	208.154	285.959	208.473	–165.457	38.743	–308.436	–199.847	–123.175	12.868
	600.00	224.221	325.330	224.727	–143.838	60.362	–339.036	–196.734	–108.122	9.413
	700.00	240.287	361.100	241.690	–120.613	83.587	–373.383	–192.930	–93.642	6.988
	800.00	256.354	394.235	258.711	–95.781	108.419	–411.169	–188.258	–79.767	5.208

References

Phase	H / S	C _p
SOL	Ku1/K6	Ku1

MnO

MANGANESE OXIDE

70.937

Phase	T [K]	C _p [——— J / (K mol) ———]	S [——— J / (K mol) ———]	-(G-H298)/T [———]	H [———]	H-H298 [———]	G [——— kJ / mol ———]	ΔH _f [———]	ΔG _f [———]	log K _f [—]
SOL	298.15	44.102	59.710	59.710	-385.221	0.000	-403.024	-385.221	-362.898	63.578
	300.00	44.179	59.983	59.711	-385.139	0.082	-403.134	-385.215	-362.760	63.162
	400.00	47.178	73.149	61.485	-380.556	4.665	-409.815	-384.847	-355.328	46.401
	500.00	48.983	83.883	64.925	-375.742	9.479	-417.683	-384.480	-347.992	36.354
	600.00	50.319	92.936	68.858	-370.774	14.447	-426.536	-384.196	-340.723	29.663
	700.00	51.433	100.779	72.871	-365.685	19.536	-436.230	-384.011	-333.492	24.886
	800.00	52.429	107.713	76.801	-360.492	24.729	-446.662	-383.896	-326.284	21.304
	900.00	53.356	113.942	80.587	-355.202	30.019	-457.750	-383.853	-319.086	18.519
	1000.00	54.241	119.609	84.210	-349.822	35.399	-469.431	-386.116	-311.843	16.289
	1100.00	55.097	124.820	87.668	-344.355	40.866	-481.656	-386.193	-304.412	14.455
	1200.00	55.935	129.650	90.968	-338.803	46.418	-494.383	-386.247	-296.975	12.927
	1300.00	56.759	134.159	94.119	-333.168	52.053	-507.575	-386.278	-289.534	11.634
	1400.00	57.574	138.396	97.132	-327.451	57.770	-521.205	-388.565	-282.027	10.523
	1500.00	58.381	142.395	100.017	-321.654	63.567	-535.247	-391.005	-274.279	9.551
	1600.00	59.120	146.211	102.786	-315.742	69.479	-549.679	-403.588	-265.820	8.678
	1700.00	59.120	149.795	105.447	-309.830	75.391	-564.481	-404.124	-257.193	7.903
	1800.00	59.120	153.174	108.006	-303.918	81.303	-579.631	-404.673	-248.534	7.212
	1900.00	59.120	156.371	110.468	-298.006	87.215	-595.110	-405.233	-239.845	6.594
	2000.00	59.120	159.403	112.839	-292.094	93.127	-610.900	-405.804	-231.126	6.036
	2100.00	59.120	162.288	115.126	-286.182	99.039	-626.986	-406.388	-222.377	5.531
	2115.00	59.120	162.708	115.462	-285.295	99.926	-629.423	-406.476	-221.063	5.460
LIQ			20.772		43.932					
	2115.00	60.668	183.480	115.462	-241.363	143.858	-629.423	-362.544	-221.063	5.460
	2200.00	60.668	185.870	118.136	-236.206	149.015	-645.121	-362.919	-215.369	5.114
	2300.00	60.668	188.567	121.140	-230.139	155.082	-663.844	-363.369	-208.652	4.739
	2400.00	60.668	191.149	124.004	-224.073	161.148	-682.831	-588.293	-195.195	4.248
	2500.00	60.668	193.626	126.740	-218.006	167.215	-702.070	-586.267	-178.857	3.737

References

Phase	H / S	C _p
SOL	Nb1	Pa1,e
LIQ	Tk1	e

86.937

MANGANESE DIOXIDE

MnO2

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL–A	298.15	54.415	53.049	53.049	–520.029	0.000	–535.846	–520.029	–465.138	81.490
	300.00	54.658	53.386	53.050	–519.928	0.101	–535.944	–520.031	–464.797	80.928
	400.00	63.493	70.487	55.321	–513.963	6.066	–542.158	–519.767	–446.409	58.295
	500.00	67.990	85.184	59.862	–507.368	12.661	–549.960	–519.148	–428.138	44.727
	600.00	70.780	97.844	65.163	–500.420	19.609	–559.127	–518.464	–410.000	35.694
	700.00	72.764	108.911	70.638	–493.238	26.791	–569.476	–517.813	–391.974	29.249
	800.00	74.318	118.732	76.048	–485.882	34.147	–580.867	–517.203	–374.039	24.422

References

Phase	H / S	C _p
SOL–A	Nb1	Pa1

157.874

DIMANGANESE TRIOXIDE

Mn2O3

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	99.034	110.499	110.499	–959.002	0.000	–991.947	–959.002	–881.114	154.368
	300.00	99.277	111.113	110.501	–958.819	0.183	–992.152	–958.998	–880.631	153.332
	400.00	109.068	141.142	114.529	–948.357	10.645	–1004.814	–958.452	–854.578	111.596
	500.00	115.516	166.208	122.428	–937.112	21.890	–1020.216	–957.630	–828.702	86.574
	600.00	120.648	187.736	131.560	–925.296	33.706	–1037.938	–956.763	–802.998	69.907
	700.00	125.159	206.678	140.965	–913.002	46.000	–1057.677	–955.902	–777.438	58.013
	800.00	129.339	223.667	150.258	–900.275	58.727	–1079.209	–955.001	–752.004	49.101
	900.00	133.326	239.132	159.287	–887.141	71.861	–1102.360	–954.064	–726.685	42.176
	1000.00	137.193	253.381	167.993	–873.614	85.388	–1126.995	–957.554	–701.381	36.636
	1100.00	140.983	266.635	176.365	–859.705	99.297	–1153.003	–956.487	–675.814	32.092
	1200.00	144.719	279.062	184.410	–845.419	113.583	–1180.294	–955.188	–650.354	28.309
	1300.00	148.418	290.792	192.146	–830.762	128.240	–1208.792	–953.654	–625.011	25.113
	1400.00	152.090	301.926	199.593	–815.737	143.265	–1238.433	–956.442	–599.667	22.374

References

Phase	H / S	C _p	Remarks
SOL	Nb1	Pa1	Pa1 NDPT= 1350. (approx.)

Mn3O4

TRIMANGANESE TETRAOXIDE

228.812

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL-A	298.15	140.515	155.599	155.599	-1387.799	0.000	-1434.191	-1387.799	-1283.232	224.817
	300.00	140.858	156.469	155.601	-1387.539	0.260	-1434.479	-1387.794	-1282.584	223.318
	400.00	154.600	199.057	161.315	-1372.702	15.097	-1452.325	-1387.089	-1247.602	162.920
	500.00	163.566	234.569	172.513	-1356.771	31.028	-1474.056	-1386.027	-1212.850	126.706
	600.00	170.652	265.035	185.454	-1340.050	47.749	-1499.071	-1384.939	-1178.317	102.582
	700.00	176.850	291.815	198.773	-1322.670	65.129	-1526.940	-1383.895	-1143.963	85.364
	800.00	182.575	315.808	211.928	-1304.696	83.103	-1557.342	-1382.825	-1109.759	72.460
	900.00	188.025	337.629	224.701	-1286.164	101.635	-1590.030	-1381.739	-1075.691	62.431
	1000.00	193.304	357.713	237.011	-1267.096	120.703	-1624.810	-1387.330	-1041.608	54.408
	1100.00	198.472	376.380	248.842	-1247.507	140.292	-1661.525	-1386.127	-1007.092	47.823
	1200.00	203.563	393.868	260.206	-1227.404	160.395	-1700.046	-1384.618	-972.698	42.340
	1300.00	208.601	410.361	271.128	-1206.796	181.003	-1740.266	-1382.798	-938.443	37.707
	1400.00	213.600	426.004	281.637	-1185.686	202.113	-1782.090	-1387.504	-904.146	33.734
	1445.00	215.840	432.796	286.239	-1176.023	211.776	-1801.414	-1392.817	-888.476	32.117
SOL-B			12.538		18.117					
	1445.00	210.037	445.334	286.239	-1157.906	229.893	-1801.414	-1374.700	-888.476	32.117
	1500.00	210.037	453.180	292.217	-1146.354	241.445	-1826.124	-1374.709	-869.969	30.295
	1600.00	210.037	466.736	302.705	-1125.350	262.449	-1872.128	-1411.022	-834.336	27.238
	1700.00	210.037	479.469	312.732	-1104.347	283.452	-1919.444	-1411.209	-798.288	24.528
	1800.00	210.037	491.474	322.332	-1083.343	304.456	-1967.997	-1411.444	-762.227	22.119
	1835.00	210.037	495.519	325.597	-1075.992	311.807	-1985.270	-1411.538	-749.602	21.338

References

Phase	H / S	C _p	Remarks
SOL-A	Nb1	Pa1	
SOL-B	Pa1	Pa1	MPT= 1835.

Phase	T [K]	C _p [————— J / (K mol)	S —————	-(G-H298)/T —————]	H [—————	H-H298 —————	G kJ / mol	ΔH _f —————	ΔG _f —————]	log K _f [- -]
SOL	298.15	126.359	129.704	129.704	-2098.569	0.000	-2137.240	-2098.569	-1988.508	348.378
	300.00	126.852	130.487	129.706	-2098.335	0.234	-2137.481	-2098.582	-1987.825	346.111
	400.00	145.103	169.803	134.943	-2084.625	13.944	-2152.546	-2098.558	-1950.876	254.758
	500.00	154.942	203.328	145.356	-2069.583	28.986	-2171.247	-2097.832	-1914.033	199.958
	600.00	161.469	232.187	157.479	-2053.744	44.825	-2193.056	-2096.927	-1877.357	163.438
	700.00	166.434	257.465	169.995	-2037.340	61.229	-2217.565	-2096.042	-1840.833	137.365
	800.00	170.564	279.965	182.360	-2020.485	78.084	-2244.457	-2095.275	-1804.429	117.817
	900.00	174.211	300.269	194.351	-2003.243	95.326	-2273.485	-2094.766	-1768.107	102.618
	1000.00	177.556	318.799	205.883	-1985.653	112.916	-2304.452	-2117.901	-1730.261	90.380
	1100.00	180.705	335.871	216.934	-1967.738	130.831	-2337.196	-2117.144	-1691.533	80.324
	1200.00	183.721	351.725	227.514	-1949.516	149.053	-2371.586	-2116.201	-1652.881	71.948
	1300.00	186.641	366.546	237.645	-1930.997	167.572	-2407.507	-2115.072	-1614.315	64.864
	1400.00	189.494	380.482	247.355	-1912.190	186.379	-2444.865	-2116.037	-1575.779	58.793
	1500.00	192.296	393.652	256.673	-1893.100	205.469	-2483.578	-2116.997	-1537.101	53.527
	1600.00	195.059	406.151	265.628	-1873.732	224.837	-2523.573	-2127.974	-1497.816	48.899
	1700.00	197.793	418.058	274.247	-1854.089	244.480	-2564.788	-2126.667	-1458.470	44.813
	1800.00	200.503	429.441	282.555	-1834.174	264.395	-2607.168	-2125.136	-1419.207	41.184
	1900.00	203.195	440.354	290.575	-1813.989	284.580	-2650.661	-2123.382	-1380.035	37.940
	2000.00	205.872	450.844	298.328	-1793.536	305.033	-2695.224	-2121.406	-1340.962	35.022
	2100.00	208.536	460.953	305.832	-1772.815	325.754	-2740.817	-2119.209	-1301.993	32.385
	2123.00	209.148	463.228	307.525	-1768.012	330.557	-2751.445	-2118.672	-1293.045	31.814

References

Phase	H / S	C _p	Remarks
SOL	Tk1	e	Tk1 MPT= 2123.

MnSiO3

RHODONITE

131.022

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
SOL-A	298.15	86.442	89.098	89.098	-1320.901	0.000	-1347.466	-1320.901	-1240.565	217.342
	300.00	86.829	89.634	89.100	-1320.741	0.160	-1347.631	-1320.908	-1240.066	215.915
	400.00	100.981	116.810	92.709	-1311.261	9.640	-1357.985	-1320.737	-1213.120	158.417
	500.00	108.403	140.212	99.929	-1300.759	20.142	-1370.865	-1320.020	-1186.293	123.931
	600.00	113.177	160.425	108.366	-1289.666	31.235	-1385.921	-1319.147	-1159.628	100.955
	700.00	116.700	178.147	117.095	-1278.165	42.736	-1402.868	-1318.252	-1133.112	84.554
	800.00	119.556	193.922	125.730	-1266.348	54.553	-1421.485	-1317.360	-1106.725	72.262
	900.00	122.024	208.149	134.110	-1254.267	66.634	-1441.600	-1316.492	-1080.448	62.708
	1000.00	124.252	221.122	142.172	-1241.951	78.950	-1463.073	-1317.891	-1054.220	55.067
	1100.00	126.323	233.063	149.899	-1229.421	91.480	-1485.790	-1317.070	-1027.892	48.811
	1200.00	128.287	244.139	157.297	-1216.690	104.211	-1509.657	-1316.193	-1001.641	43.600
	1300.00	130.175	254.483	164.379	-1203.766	117.135	-1534.594	-1315.260	-975.466	39.195
	1400.00	132.008	264.197	171.166	-1190.657	130.244	-1560.533	-1316.550	-949.300	35.419
	1500.00	133.801	273.366	177.676	-1177.366	143.535	-1587.415	-1317.964	-922.965	32.140
	1559.00	134.844	278.548	181.396	-1169.441	151.460	-1603.697	-1329.740	-907.100	30.393

References

Phase	H / S	C _p	Remarks
SOL-A	Nb1	S5	Tk1 TPT= 1273.(B), 1413(C) / DPT= 1559. (LIQ + SiO2)

201.959

TEPHROITE

Mn2SiO4

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [— —]
SOL	298.15	129.871	163.201	163.201	-1730.498	0.000	-1779.156	-1730.498	-1632.130	285.942
	300.00	130.337	164.006	163.204	-1730.257	0.241	-1779.459	-1730.501	-1631.520	284.073
	400.00	147.419	204.153	168.561	-1716.261	14.237	-1797.923	-1730.029	-1598.570	208.752
	500.00	156.373	238.097	179.167	-1701.033	29.465	-1820.082	-1729.032	-1565.817	163.580
	600.00	162.127	267.148	191.469	-1685.091	45.407	-1845.379	-1727.994	-1533.273	133.483
	700.00	166.371	292.472	204.127	-1668.657	61.841	-1873.387	-1727.070	-1500.894	111.998
	800.00	169.810	314.919	216.600	-1651.843	78.655	-1903.778	-1726.259	-1468.640	95.892
	900.00	172.780	335.095	228.664	-1634.710	95.788	-1936.295	-1725.588	-1436.479	83.371
	1000.00	175.460	353.439	240.238	-1617.296	113.202	-1970.736	-1729.530	-1404.294	73.353
	1100.00	177.950	370.281	251.305	-1599.625	130.873	-2006.933	-1729.111	-1371.791	65.141
	1200.00	180.311	385.866	261.877	-1581.711	148.787	-2044.750	-1728.658	-1339.327	58.299
	1300.00	182.580	400.389	271.979	-1563.565	166.933	-2084.071	-1728.169	-1306.902	52.512
	1400.00	184.784	414.001	281.643	-1545.197	185.301	-2124.798	-1732.203	-1274.387	47.548
	1500.00	186.938	426.823	290.898	-1526.610	203.888	-2166.845	-1736.560	-1241.427	43.230
	1600.00	189.056	438.956	299.776	-1507.810	222.688	-2210.139	-1761.282	-1207.078	39.407
	1618.00	189.433	441.073	301.336	-1504.404	226.094	-2218.060	-1761.378	-1200.843	38.767
			55.390		89.621					
LIQ	1618.00	243.090	496.463	301.336	-1414.783	315.715	-2218.060	-1671.757	-1200.843	38.767
	1700.00	243.090	508.480	311.040	-1394.850	335.648	-2259.266	-1717.993	-1176.629	36.153
	1800.00	243.090	522.375	322.399	-1370.540	359.958	-2310.816	-1713.040	-1144.927	33.225
	1900.00	243.090	535.518	333.273	-1346.231	384.267	-2363.716	-1708.134	-1113.499	30.612
	2000.00	243.090	547.987	343.699	-1321.922	408.576	-2417.897	-1703.275	-1082.328	28.268
	2100.00	243.090	559.848	353.712	-1297.613	432.885	-2473.294	-1698.461	-1051.399	26.152
	2200.00	243.090	571.156	363.341	-1273.304	457.194	-2529.848	-1693.693	-1020.699	24.234
	2300.00	243.090	581.962	372.613	-1248.995	481.503	-2587.508	-1688.970	-990.214	22.488
	2400.00	243.090	592.308	381.553	-1224.686	505.812	-2646.225	-2133.214	-946.492	20.600
	2500.00	243.090	602.231	390.183	-1200.377	530.121	-2705.956	-2123.580	-897.243	18.747
	2600.00	243.090	611.766	398.523	-1176.068	554.430	-2766.659	-2114.008	-848.379	17.044
	2700.00	243.090	620.940	406.592	-1151.759	578.739	-2828.297	-2104.498	-799.882	15.475
	2800.00	243.090	629.780	414.406	-1127.450	603.048	-2890.835	-2095.053	-751.736	14.024
	2900.00	243.090	638.311	421.981	-1103.141	627.357	-2954.242	-2085.676	-703.926	12.679
	3000.00	243.090	646.552	429.330	-1078.832	651.666	-3018.488	-2076.369	-656.438	11.430

References

Phase	H / S	C _p
SOL	Nb1	S5
LIQ	S5	S5

MnTiO3

MANGANESE TITANIUM TRIOXIDE

150.816

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
kJ / mol										
SOL	298.15	100.125	104.935	104.935	–1358.553	0.000	–1389.839	–1358.553	–1279.379	224.142
	300.00	100.445	105.555	104.937	–1358.367	0.186	–1390.034	–1358.544	–1278.887	222.674
	400.00	112.011	136.254	109.044	–1347.669	10.884	–1402.170	–1357.621	–1252.455	163.554
	500.00	117.863	161.939	117.128	–1336.148	22.405	–1417.117	–1356.306	–1226.312	128.112
	600.00	121.467	183.768	126.462	–1324.169	34.384	–1434.430	–1354.956	–1200.441	104.508
	700.00	124.008	202.693	136.030	–1311.889	46.664	–1453.774	–1353.706	–1174.789	87.664
	800.00	125.984	219.386	145.427	–1299.386	59.167	–1474.895	–1352.590	–1149.307	75.042
	900.00	127.630	234.322	154.489	–1286.703	71.850	–1497.593	–1351.640	–1123.956	65.233
	1000.00	129.072	247.845	163.159	–1273.867	84.686	–1521.712	–1353.103	–1098.655	57.388
	1100.00	130.381	260.209	171.428	–1260.893	97.660	–1547.123	–1352.488	–1073.241	50.964
	1200.00	131.599	271.607	179.307	–1247.794	110.759	–1573.722	–1355.955	–1047.760	45.608
	1300.00	132.752	282.186	186.819	–1234.576	123.977	–1601.418	–1354.972	–1022.117	41.069
	1400.00	133.859	292.065	193.987	–1221.245	137.308	–1630.135	–1356.307	–996.484	37.179
	1500.00	134.932	301.337	200.838	–1207.805	150.748	–1659.810	–1357.865	–970.674	33.802
	1600.00	135.979	310.079	207.395	–1194.259	164.294	–1690.385	–1369.675	–944.210	30.825
	1677.00	136.771	316.489	212.258	–1183.758	174.795	–1714.510	–1369.495	–923.739	28.772

References

Phase	H / S	C _p	Remarks
SOL	Tk1	e	Tk1 MPT= 1677.

Mn2TiO4

DIMANGANESE TITANIUM TETRAOXIDE

221.754

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
kJ / mol										
SOL	298.15	144.586	170.289	170.289	–1749.879	0.000	–1800.651	–1749.879	–1650.065	289.084
	300.00	144.972	171.184	170.292	–1749.611	0.268	–1800.966	–1749.864	–1649.445	287.194
	400.00	159.139	215.087	176.181	–1734.317	15.562	–1820.351	–1748.560	–1616.148	211.047
	500.00	166.632	251.474	187.708	–1717.996	31.883	–1843.733	–1746.893	–1583.237	165.400
	600.00	171.497	282.310	200.971	–1701.076	48.803	–1870.462	–1745.285	–1550.659	134.997
	700.00	175.122	309.030	214.542	–1683.737	66.142	–1900.059	–1743.880	–1518.335	113.300
	800.00	178.085	332.613	227.856	–1666.073	83.806	–1932.164	–1742.681	–1486.199	97.039
	900.00	180.664	353.740	240.689	–1648.133	101.746	–1966.500	–1741.722	–1454.199	84.400
	1000.00	183.004	372.898	252.967	–1629.948	119.931	–2002.846	–1745.478	–1422.201	74.288
	1100.00	185.188	390.444	264.679	–1611.538	138.341	–2041.026	–1744.970	–1389.899	66.001
	1200.00	187.266	406.647	275.843	–1592.914	156.965	–2080.890	–1748.520	–1357.521	59.091
	1300.00	189.269	421.716	286.491	–1574.087	175.792	–2122.317	–1747.594	–1324.975	53.238
	1400.00	191.218	435.814	296.659	–1555.062	194.817	–2165.201	–1751.237	–1292.371	48.219
	1500.00	193.127	449.072	306.382	–1535.844	214.035	–2209.452	–1755.256	–1259.348	43.854
	1600.00	195.005	461.596	315.695	–1516.438	233.441	–2254.991	–1779.699	–1224.957	39.991
	1700.00	196.860	473.474	324.630	–1496.844	253.035	–2301.750	–1779.972	–1190.277	36.573
	1733.00	197.467	477.264	327.500	–1490.338	259.541	–2317.437	–1780.052	–1178.829	35.531

References

Phase	H / S	C _p	Remarks
SOL	Tk1	e	Tk1 TPT= 1043., MPT= 1733.

85.912 MANGANESE MONOPHOSPHIDE

MnP

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
SOL	298.15	46.861	65.270	65.270	–112.968	0.000	–132.428	–112.968	–110.640	19.384
	300.00	47.001	65.561	65.271	–112.881	0.087	–132.549	–112.974	–110.626	19.262
	400.00	51.987	79.866	67.188	–107.897	5.071	–139.843	–113.971	–109.618	14.315
	500.00	54.334	91.747	70.947	–102.568	10.400	–148.441	–114.192	–108.503	11.335
	600.00	55.628	101.778	75.272	–97.064	15.904	–158.131	–114.425	–107.344	9.345
	700.00	56.423	110.417	79.690	–91.459	21.509	–168.751	–114.728	–106.141	7.920
	800.00	56.949	117.988	84.014	–85.789	27.179	–180.179	–115.101	–104.890	6.849
	900.00	57.319	124.718	88.169	–80.074	32.894	–192.320	–115.564	–103.587	6.012
	1000.00	57.591	130.772	92.132	–74.328	38.640	–205.100	–118.362	–102.181	5.337
	1100.00	57.799	136.271	95.899	–68.558	44.410	–218.456	–119.014	–100.531	4.774
	1200.00	57.964	141.308	99.476	–62.770	50.198	–232.339	–183.261	–97.732	4.254

References

Phase	H / S	C _p
SOL	Nb1/Pa3	Pa3

147.859 MANGANESE TRIPHOSPHIDE

MnP3

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
SOL	298.15	102.703	96.650	96.650	–213.007	0.000	–241.823	–213.007	–195.545	34.259
	300.00	102.759	97.286	96.652	–212.817	0.190	–242.003	–212.998	–195.437	34.029
	400.00	105.772	127.260	100.719	–202.390	10.617	–253.295	–215.056	–189.070	24.690
	500.00	108.784	151.186	108.498	–191.663	21.344	–267.256	–215.143	–182.561	19.072
	600.00	111.796	171.286	117.331	–180.634	32.373	–283.405	–215.116	–176.046	15.326
	700.00	114.809	188.746	126.312	–169.303	43.704	–301.425	–214.959	–169.544	12.652
	800.00	117.821	204.273	135.104	–157.672	55.335	–321.090	–214.636	–163.076	10.648
	900.00	120.834	218.324	143.582	–145.739	67.268	–342.231	–214.146	–156.659	9.092
	1000.00	123.846	231.211	151.710	–133.505	79.502	–364.717	–215.721	–150.260	7.849

References

Phase	H / S	C _p	Remarks
SOL	Nb1/Ku1	e	Tk1 MPT= 1600.

Mn2P

DIMANGANESE PHOSPHIDE

140.850

Phase	T [K]	C _p [————— J / (K mol)]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [—]
SOL	298.15	73.553	91.010	91.010	-171.126	0.000	-198.261	-171.126	-166.930	29.245
	300.00	73.689	91.466	91.012	-170.990	0.136	-198.430	-171.131	-166.904	29.060
	400.00	79.320	113.501	93.978	-163.317	7.809	-208.717	-172.170	-165.266	21.582
	500.00	83.272	131.643	99.750	-155.179	15.947	-221.001	-172.499	-163.502	17.081
	600.00	86.542	147.122	106.386	-146.685	24.441	-234.958	-172.846	-161.670	14.075
	700.00	89.454	160.684	113.194	-137.883	33.243	-250.362	-173.228	-159.777	11.923
	800.00	92.140	172.807	119.901	-128.801	42.325	-267.047	-173.600	-157.831	10.305
	900.00	94.662	183.806	126.399	-119.460	51.666	-284.886	-173.981	-155.837	9.045
	1000.00	97.052	193.904	132.652	-109.873	61.253	-303.778	-178.850	-153.708	8.029
	1100.00	99.331	203.262	138.651	-100.053	71.073	-323.642	-179.241	-151.174	7.179
	1200.00	101.512	211.999	144.403	-90.010	81.116	-344.410	-243.065	-147.521	6.421

References

Phase	H / S	C _p
SOL	Pa3	Pa3

MnS

References		
Phase	H / S	C _p
SOL	Nb1	Mi1
LIQ	Mi1	Mi1

Phase	H / S	C _p
SQL	Mi1	Mi1

MnSO4

MANGANESE SULFATE

151.002

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	100.165	112.098	112.098	-1065.251	0.000	-1098.673	-1065.251	-957.243	167.705
	300.00	100.641	112.719	112.100	-1065.065	0.186	-1098.881	-1065.265	-956.573	166.554
	400.00	118.692	144.439	116.302	-1053.996	11.255	-1111.772	-1067.449	-920.223	120.169
	500.00	129.051	172.119	124.762	-1041.572	23.679	-1127.632	-1067.963	-883.366	92.285
	600.00	136.384	196.326	134.715	-1028.284	36.967	-1146.080	-1067.674	-846.460	73.691
	700.00	142.286	217.806	145.079	-1014.342	50.909	-1166.806	-1066.827	-809.653	60.417
	800.00	147.427	237.147	155.398	-999.852	65.399	-1189.570	-1065.780	-772.985	50.471
	900.00	152.125	254.786	165.476	-984.872	80.379	-1214.179	-1117.362	-735.302	42.676
	973.00	155.375	266.776	172.630	-973.647	91.604	-1233.220	-1115.193	-704.398	37.815

References

Phase	H / S	C _p	Remarks
SOL	Nb1	Ku1,e	Tk1 TPT= 673., 923. / MPT= 973.

MnSb

MANGANESE ANTIMONY

176.688

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	43.706	92.466	92.466	-37.656	0.000	-65.225	-37.656	-42.109	7.377
	300.00	43.744	92.737	92.467	-37.575	0.081	-65.396	-37.671	-42.137	7.337
	400.00	45.773	105.599	94.207	-33.099	4.557	-75.339	-38.488	-43.504	5.681
	500.00	47.802	116.031	97.560	-28.421	9.235	-86.436	-39.346	-44.660	4.666
	600.00	49.831	124.926	101.397	-23.539	14.117	-98.494	-40.247	-45.639	3.973
	700.00	51.861	132.760	105.329	-18.454	19.202	-111.386	-41.197	-46.462	3.467
	800.00	53.890	139.817	109.206	-13.167	24.489	-125.020	-42.188	-47.148	3.078
	900.00	55.919	146.282	112.971	-7.676	29.980	-139.330	-43.252	-47.705	2.769
	1000.00	57.948	152.278	116.605	-1.983	35.673	-154.261	-66.480	-45.983	2.402
	1100.00	59.978	157.897	120.106	3.913	41.569	-169.773	-67.511	-43.882	2.084
	1200.00	62.007	163.202	123.478	10.013	47.669	-185.830	-68.382	-41.694	1.815

References

Phase	H / S	C _p
SOL	Tk1/Ku1	e

231.626

2-MANGANESE ANTIMONY

Mn2Sb

Phase	T [K]	C _p [————— J / (K mol)]	S ————— J / (K mol)]	–(G–H298)/T [————— kJ / mol]	H ————— kJ / mol]	H–H298 ————— kJ / mol]	G ————— kJ / mol]	ΔH _f ————— kJ / mol]	ΔG _f ————— kJ / mol]	log K _f [–]
SOL–1	298.15	66.890	136.817	136.817	–32.635	0.000	–73.427	–32.635	–40.768	7.142
	300.00	66.944	137.231	136.818	–32.511	0.124	–73.680	–32.655	–40.819	7.107
	400.00	69.873	156.890	139.479	–25.670	6.965	–88.427	–33.838	–43.366	5.663
	500.00	72.802	172.797	144.600	–18.537	14.098	–104.935	–35.158	–45.598	4.764
	550.00	74.266	179.804	147.486	–14.860	17.775	–113.752	–35.870	–46.608	4.426
			0.000		0.000					
SOL–2	550.00	74.266	179.804	147.486	–14.860	17.775	–113.752	–35.870	–46.608	4.426
	600.00	75.730	186.329	150.454	–11.110	21.525	–122.907	–36.619	–47.551	4.140
	700.00	78.659	198.223	156.445	–3.391	29.244	–142.146	–38.209	–49.249	3.675
	800.00	81.588	208.917	162.346	4.622	37.257	–162.512	–39.886	–50.712	3.311
	900.00	84.517	218.696	168.072	12.927	45.562	–183.900	–41.679	–51.959	3.016
	1000.00	87.446	227.753	173.592	21.525	54.160	–206.227	–67.915	–50.798	2.653
	1100.00	90.374	236.224	178.905	30.416	63.051	–229.431	–69.740	–48.997	2.327
	1200.00	93.303	244.213	184.018	39.600	72.235	–253.456	–71.358	–47.038	2.048
	1221.00	93.918	245.837	185.067	41.566	74.201	–258.602	–71.671	–46.610	1.994

References

Phase	H / S	C _p	Remarks
SOL–1	Ku1	e	
SOL–2	u	e	Tk1 MPT= 1221.

133.898

MANGANESE SELENIDE

MnSe

Phase	T [K]	C _p [————— J / (K mol)]	S ————— J / (K mol)]	–(G–H298)/T [————— kJ / mol]	H ————— kJ / mol]	H–H298 ————— kJ / mol]	G ————— kJ / mol]	ΔH _f ————— kJ / mol]	ΔG _f ————— kJ / mol]	log K _f [–]
SOL	298.15	51.046	90.793	90.793	–171.544	0.000	–198.614	–171.544	–176.471	30.917
	300.00	51.058	91.109	90.794	–171.450	0.094	–198.782	–171.545	–176.502	30.732
	400.00	51.732	105.889	92.805	–166.310	5.234	–208.666	–171.803	–178.126	23.261
	500.00	52.406	117.505	96.624	–161.103	10.441	–219.856	–178.324	–179.558	18.758
	600.00	53.080	127.120	100.928	–155.829	15.715	–232.101	–179.669	–179.680	15.643
	700.00	53.753	135.352	105.271	–150.487	21.057	–245.234	–181.117	–179.568	13.400
	800.00	54.427	142.574	109.492	–145.078	26.466	–259.138	–182.633	–179.244	11.703
	900.00	55.101	149.024	113.532	–139.602	31.942	–273.723	–184.216	–178.726	10.373
	1000.00	55.775	154.864	117.378	–134.058	37.486	–288.922	–188.098	–177.983	9.297
	1100.00	56.449	160.212	121.032	–128.447	43.097	–304.680	–243.103	–171.935	8.165
	1200.00	57.123	165.152	124.506	–122.768	48.776	–320.951	–243.324	–165.456	7.202
	1300.00	57.796	169.751	127.811	–117.022	54.522	–337.699	–243.508	–158.959	6.387
	1400.00	58.470	174.059	130.962	–111.209	60.335	–354.891	–245.935	–152.385	5.686
	1500.00	59.144	178.116	133.972	–105.328	66.216	–372.502	–248.504	–145.559	5.069
	1600.00	59.818	181.954	136.852	–99.380	72.164	–390.507	–261.236	–138.014	4.506

References

Phase	H / S	C _p
SOL	Pa3	Pa3

MnSi

MANGANESE SILICON

83.024

Phase	T [K]	C _p [————— J / (K mol) —————]	S — (G-H298)/T —	H [————— kJ / mol —————]	H-H298	G —————	ΔH _f	ΔG _f	log K _f [—]	
SOL	298.15	45.929	47.070	47.070	-77.822	0.000	-91.856	-77.822	-76.702	13.438
	300.00	46.042	47.354	47.071	-77.737	0.085	-91.943	-77.823	-76.695	13.354
	400.00	50.431	61.265	48.938	-72.891	4.931	-97.397	-77.829	-76.317	9.966
	500.00	53.149	72.828	52.592	-67.704	10.118	-104.118	-77.838	-75.938	7.933
	600.00	55.210	82.707	56.808	-62.283	15.539	-111.907	-77.898	-75.554	6.578
	700.00	56.959	91.352	61.138	-56.672	21.150	-120.619	-78.012	-75.155	5.608
	800.00	58.543	99.063	65.405	-50.896	26.926	-130.146	-78.155	-74.737	4.880
	900.00	60.031	106.045	69.539	-44.967	32.855	-140.407	-78.331	-74.299	4.312
	1000.00	61.459	112.444	73.514	-38.892	38.930	-151.336	-80.778	-73.795	3.855
	1100.00	62.848	118.367	77.325	-32.676	45.146	-162.880	-81.007	-73.085	3.471
	1200.00	64.210	123.894	80.978	-26.323	51.499	-174.996	-81.184	-72.357	3.150
	1300.00	65.554	129.087	84.481	-19.835	57.987	-187.648	-81.312	-71.616	2.878
	1400.00	66.883	133.993	87.844	-13.213	64.609	-200.804	-83.671	-70.802	2.642
	1500.00	68.203	138.653	91.077	-6.459	71.363	-214.438	-86.159	-69.742	2.429
	1548.00	68.834	140.811	92.586	-3.170	74.652	-221.145	-98.508	-68.965	2.327
LIQ			38.759		59.999					
	1548.00	78.722	179.570	92.586	56.829	134.651	-221.145	-38.509	-68.965	2.327
	1600.00	78.722	182.171	95.456	60.923	138.745	-230.551	-38.304	-69.992	2.285
	1700.00	78.722	186.944	100.698	68.795	146.617	-249.009	-88.118	-71.537	2.198
	1800.00	78.722	191.443	105.616	76.667	154.489	-267.931	-87.567	-70.577	2.048
	1900.00	78.722	195.700	110.246	84.539	162.361	-287.290	-87.017	-69.649	1.915
	2000.00	78.722	199.737	114.621	92.412	170.234	-307.063	-86.467	-68.749	1.796

References

Phase	H / S	C _p
SOL	Tk1	Tk1,C1
LIQ	Tk1	C1

102.683

MANGANESE 1.7–SILICON

MnSi1.7

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	58.700	55.480	55.480	–83.680	0.000	–100.221	–83.680	–81.139	14.215
	300.00	58.889	55.843	55.481	–83.571	0.109	–100.324	–83.683	–81.124	14.125
	400.00	65.703	73.849	57.890	–77.296	6.384	–106.836	–83.746	–80.257	10.481
	500.00	69.104	88.912	62.631	–70.540	13.140	–114.996	–83.781	–79.382	8.293
	600.00	71.163	101.706	68.105	–63.519	20.161	–124.543	–83.905	–78.493	6.833
	700.00	72.587	112.789	73.714	–56.328	27.352	–135.280	–84.152	–77.573	5.789
	800.00	73.674	122.555	79.221	–49.013	34.667	–147.057	–84.512	–76.610	5.002
	900.00	74.564	131.286	84.529	–41.600	42.080	–159.757	–84.997	–75.594	4.387
	1000.00	75.332	139.182	89.606	–34.104	49.576	–173.286	–87.850	–74.472	3.890
	1100.00	76.020	146.395	94.446	–26.536	57.144	–187.570	–88.585	–73.099	3.471
	1200.00	76.654	153.037	99.055	–18.902	64.778	–202.546	–89.371	–71.657	3.119
	1300.00	77.250	159.196	103.447	–11.206	72.474	–218.162	–90.211	–70.147	2.819
	1400.00	77.818	164.942	107.637	–3.453	80.227	–234.372	–93.386	–68.506	2.556
	1433.00	78.000	166.757	108.978	–0.882	82.798	–239.845	–95.749	–67.883	2.474

References

Phase	H / S	C _p	Remarks
SOL	C1	Tk1,C1	Tk1 DPT= 1433.

192.900

3–MANGANESE SILICON

Mn3Si

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL–1	298.15	99.577	104.391	104.391	–123.846	0.000	–154.970	–123.846	–120.730	21.151
	300.00	99.877	105.008	104.393	–123.662	0.184	–155.164	–123.845	–120.711	21.018
	400.00	112.240	135.581	108.477	–113.005	10.841	–167.237	–123.500	–119.705	15.632
	500.00	120.760	161.583	116.563	–101.336	22.510	–182.128	–122.862	–118.827	12.414
	600.00	127.767	184.235	125.994	–88.902	34.944	–199.442	–122.117	–118.089	10.281
	677.00	132.654	199.954	133.524	–78.873	44.973	–214.242	–121.500	–117.609	9.074
			8.096		5.481					
SOL–2	677.00	132.654	208.050	133.524	–73.392	50.454	–214.242	–116.019	–117.609	9.074
	700.00	134.059	212.505	136.047	–70.325	53.521	–219.079	–115.817	–117.666	8.780
	800.00	139.971	230.795	146.764	–56.621	67.225	–241.257	–114.852	–117.994	7.704
	900.00	145.662	247.612	157.047	–42.338	81.508	–265.189	–113.765	–118.451	6.875
	1000.00	151.215	263.247	166.894	–27.493	96.353	–290.740	–119.264	–118.899	6.211
	1100.00	156.678	277.916	176.327	–12.098	111.748	–317.806	–117.892	–118.925	5.647
	1200.00	162.080	291.781	185.376	3.840	127.686	–346.297	–116.149	–119.094	5.184
	1300.00	167.439	304.966	194.072	20.316	144.162	–376.139	–114.037	–119.422	4.798
	1348.00	170.000	311.083	198.130	28.415	152.261	–390.925	–112.894	–119.641	4.636

References

Phase	H / S	C _p	Remarks
SOL–1	Tk1	Tk1,C1	
SOL–2	Tk1	Tk1,C1	Tk1 DPT= 1348.

Mn5Si3

5-MANGANESE 3-SILICON

358.947

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	194.557	235.559	235.559	-273.215	0.000	-343.447	-273.215	-278.898	48.862
	300.00	194.928	236.764	235.563	-272.855	0.360	-343.884	-273.210	-278.934	48.567
	400.00	209.873	295.084	243.413	-252.547	20.668	-370.580	-272.918	-280.888	36.680
	500.00	219.700	343.027	258.683	-231.043	42.172	-402.557	-272.838	-282.896	29.554
	600.00	227.512	383.793	276.221	-208.672	64.543	-438.948	-273.118	-284.888	24.802
	700.00	234.373	419.388	294.184	-185.572	87.643	-479.144	-273.743	-286.803	21.401
	800.00	240.726	451.103	311.852	-161.814	111.401	-522.696	-274.562	-288.615	18.845
	900.00	246.785	479.808	328.944	-137.437	135.778	-569.264	-275.592	-290.312	16.849
	1000.00	252.661	506.115	345.363	-112.463	160.752	-618.578	-288.005	-291.655	15.234
	1100.00	258.418	530.467	361.097	-86.908	186.307	-670.422	-289.363	-291.952	13.864
	1200.00	264.093	553.196	376.169	-60.782	212.433	-724.618	-290.493	-292.136	12.716
	1300.00	269.710	574.557	390.616	-34.092	239.123	-781.016	-291.400	-292.235	11.742
	1400.00	275.286	594.749	404.482	-6.842	266.373	-839.490	-303.483	-291.948	10.893
	1500.00	280.831	613.931	417.811	20.964	294.179	-899.932	-316.242	-290.410	10.113
	1573.00	284.864	627.371	427.226	41.612	314.827	-945.242	-378.949	-286.868	9.526
LIQ			105.065		165.268					
	1573.00	324.641	732.437	427.226	206.880	480.095	-945.242	-213.681	-286.868	9.526
	1600.00	324.641	737.962	432.424	215.646	488.861	-965.093	-213.462	-288.126	9.406
	1700.00	324.641	757.643	450.981	248.110	521.325	-1039.883	-363.260	-291.476	8.956
	1800.00	324.641	776.199	468.538	280.574	553.789	-1116.584	-361.966	-287.290	8.337
	1900.00	324.641	793.751	485.197	313.038	586.253	-1195.089	-360.673	-283.177	7.785
	2000.00	324.641	810.403	501.045	345.502	618.717	-1275.304	-359.380	-279.132	7.290

References

Phase	H / S	C _p
SOL	Tk1	Tk1,C1
LIQ	Tk1	C1

MnSn2

MANGANESE 2-TIN

292.358

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	79.955	130.876	130.876	-27.614	0.000	-66.635	-27.614	-26.564	4.654
	300.00	80.114	131.371	130.877	-27.466	0.148	-66.877	-27.615	-26.557	4.624
	400.00	85.772	155.307	134.102	-19.132	8.482	-81.255	-27.596	-26.207	3.422
	500.00	88.458	174.767	140.351	-10.406	17.208	-97.790	-27.735	-25.850	2.700
	600.00	89.975	191.040	147.481	-1.478	26.136	-116.102	-41.822	-22.824	1.987
	700.00	90.939	204.987	154.724	7.570	35.184	-135.921	-41.769	-19.661	1.467
	800.00	91.609	217.176	161.784	16.700	44.314	-157.041	-41.740	-16.506	1.078

References

Phase	H / S	C _p
SOL	Tk1/Ku1	e

182.538		MANGANESE TELLURIDE								MnTe
Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-A	298.15	72.054	93.722	93.722	-108.366	0.000	-136.309	-108.366	-112.009	19.623
	300.00	73.007	94.170	93.723	-108.232	0.134	-136.483	-108.328	-112.031	19.506
	307.00	76.615	95.896	93.753	-107.708	0.658	-137.148	-108.170	-112.119	19.077
			0.000		0.000					
SOL-B	307.00	57.541	95.896	93.753	-107.708	0.658	-137.148	-108.170	-112.119	19.077
	400.00	57.798	111.154	96.102	-102.345	6.021	-146.807	-107.856	-113.367	14.804
	500.00	58.074	124.081	100.452	-96.551	11.815	-158.592	-107.886	-114.750	11.988
	600.00	58.350	134.694	105.301	-90.730	17.636	-171.546	-108.297	-116.090	10.107
	700.00	58.626	143.709	110.160	-84.881	23.485	-185.478	-109.071	-117.332	8.755
	800.00	58.902	151.556	114.854	-79.005	29.361	-200.249	-127.796	-116.561	7.611
	900.00	59.178	158.509	119.326	-73.101	35.265	-215.759	-129.202	-115.073	6.679
	1000.00	59.455	164.759	123.562	-67.169	41.197	-231.928	-132.948	-113.378	5.922
	1100.00	59.731	170.438	127.569	-61.210	47.156	-248.692	-134.544	-111.344	5.287
	1200.00	60.007	175.647	131.362	-55.223	53.143	-266.000	-136.154	-109.164	4.752
	1300.00	60.283	180.461	134.956	-49.209	59.157	-283.808	-137.780	-106.849	4.293
	1400.00	60.559	184.939	138.368	-43.166	65.200	-302.081	-188.139	-101.852	3.800
	1438.00	60.664	186.562	139.620	-40.863	67.503	-309.140	-190.253	-99.470	3.613

References

Phase	H / S	C _p	Remarks
SOL-A	Mi1	Mi1,e	
SOL-B	u	Mi1	Mi1,Tk1 DPT= 1438.

310.138		MANGANESE DITELLURIDE								MnTe2
Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	77.898	145.017	145.017	-125.520	0.000	-168.757	-125.520	-129.699	22.723
	300.00	77.906	145.499	145.019	-125.376	0.144	-169.026	-125.520	-129.725	22.587
	400.00	78.324	167.969	148.080	-117.564	7.956	-184.752	-125.809	-131.099	17.120
	500.00	78.743	185.491	153.873	-109.711	15.809	-202.457	-126.685	-132.333	13.825
	600.00	79.161	199.885	160.378	-101.816	23.704	-221.747	-128.148	-133.334	11.608
	700.00	79.580	212.119	166.917	-93.879	31.641	-242.362	-130.183	-134.045	10.003

References

Phase	H / S	C _p	Remarks
SOL	Mi1	Mi1	Tk1 DPT= 1008. (LIQ + MnTe)

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		[-]
SOL	298.15	124.298	140.582	140.582	-1304.998	0.000	-1346.913	-1304.998	-1205.303	211.164
	300.00	124.416	141.352	140.585	-1304.768	0.230	-1347.173	-1304.970	-1204.684	209.754
	400.00	129.859	177.926	145.535	-1292.041	12.957	-1363.212	-1303.381	-1171.491	152.981
	500.00	134.340	207.395	155.053	-1278.827	26.171	-1382.524	-1301.716	-1138.711	118.960
	600.00	138.443	232.254	165.901	-1265.186	39.812	-1404.538	-1300.057	-1106.266	96.309
	700.00	142.366	253.892	176.958	-1251.144	53.854	-1428.868	-1298.401	-1074.098	80.150
	800.00	146.195	273.153	187.800	-1236.716	68.282	-1455.238	-1296.701	-1042.170	68.047
	900.00	149.969	290.591	198.267	-1221.907	83.091	-1483.438	-1294.937	-1010.458	58.645
	1000.00	153.708	306.585	208.310	-1206.723	98.275	-1513.308	-1295.322	-978.902	51.133
	1100.00	157.424	321.409	217.926	-1191.166	113.832	-1544.717	-1293.352	-947.354	44.986
	1200.00	161.125	335.266	227.133	-1175.239	129.759	-1577.558	-1291.179	-915.994	39.872
	1300.00	164.816	348.309	235.957	-1158.941	146.057	-1611.743	-1288.792	-884.824	35.553
	1400.00	168.498	360.658	244.427	-1142.276	162.722	-1647.196	-1288.466	-853.781	31.855
	1500.00	172.175	372.408	252.571	-1125.242	179.756	-1683.854	-1288.095	-822.690	28.649

References

Phase	H / S	C _p
SOL	K7	K7

95.940

MOLYBDENUM

Mo

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	23.897	28.593	28.593	0.000	0.000	-8.525	0.000	0.000	0.000
	300.00	23.922	28.741	28.594	0.044	0.044	-8.578	0.000	0.000	0.000
	400.00	25.079	35.792	29.547	2.498	2.498	-11.819	0.000	0.000	0.000
	500.00	25.874	41.479	31.383	5.048	5.048	-15.692	0.000	0.000	0.000
	600.00	26.465	46.250	33.474	7.666	7.666	-20.084	0.000	0.000	0.000
	700.00	26.963	50.368	35.600	10.338	10.338	-24.920	0.000	0.000	0.000
	800.00	27.432	53.999	37.677	13.058	13.058	-30.142	0.000	0.000	0.000
	900.00	27.906	57.257	39.675	15.824	15.824	-35.707	0.000	0.000	0.000
	1000.00	28.380	60.222	41.583	18.638	18.638	-41.583	0.000	0.000	0.000
	1100.00	28.901	62.951	43.403	21.502	21.502	-47.744	0.000	0.000	0.000
	1200.00	29.479	65.490	45.139	24.420	24.420	-54.167	0.000	0.000	0.000
	1300.00	30.128	67.874	46.797	27.400	27.400	-60.837	0.000	0.000	0.000
	1400.00	30.851	70.133	48.384	30.448	30.448	-67.738	0.000	0.000	0.000
	1500.00	31.647	72.288	49.907	33.573	33.573	-74.860	0.000	0.000	0.000
	1600.00	32.501	74.358	51.370	36.780	36.780	-82.193	0.000	0.000	0.000
	1700.00	33.397	76.355	52.782	40.074	40.074	-89.729	0.000	0.000	0.000
	1800.00	34.367	78.297	54.146	43.473	43.473	-97.462	0.000	0.000	0.000
	1900.00	35.146	80.173	55.466	46.944	46.944	-105.386	0.000	0.000	0.000
	2000.00	36.539	82.010	56.748	50.524	50.524	-113.495	0.000	0.000	0.000
	2100.00	37.748	83.826	57.994	54.247	54.247	-121.787	0.000	0.000	0.000
	2200.00	39.070	85.612	59.209	58.086	58.086	-130.259	0.000	0.000	0.000
	2300.00	40.506	87.380	60.395	62.064	62.064	-138.909	0.000	0.000	0.000
	2400.00	42.061	89.136	61.556	66.191	66.191	-147.735	0.000	0.000	0.000
	2500.00	43.817	90.888	62.694	70.483	70.483	-156.736	0.000	0.000	0.000
	2600.00	45.892	92.645	63.813	74.965	74.965	-165.913	0.000	0.000	0.000
	2700.00	48.406	94.423	64.913	79.676	79.676	-175.266	0.000	0.000	0.000
	2800.00	51.472	96.237	65.999	84.665	84.665	-184.798	0.000	0.000	0.000
	2897.00	55.060	98.049	67.042	89.826	89.826	-194.221	0.000	0.000	0.000
LIQ			13.496		39.099					
	2897.00	40.350	111.545	67.042	128.925	128.925	-194.221	0.000	0.000	0.000
	2900.00	40.350	111.587	67.088	129.047	129.047	-194.555	0.000	0.000	0.000
	3000.00	40.350	112.955	68.594	133.082	133.082	-205.783	0.000	0.000	0.000
	3100.00	40.350	114.278	70.047	137.117	137.117	-217.145	0.000	0.000	0.000
	3200.00	40.350	115.559	71.449	141.152	141.152	-228.637	0.000	0.000	0.000
	3300.00	40.350	116.801	72.805	145.187	145.187	-240.255	0.000	0.000	0.000
	3400.00	40.350	118.005	74.116	149.222	149.222	-251.996	0.000	0.000	0.000
	3500.00	40.350	119.175	75.387	153.257	153.257	-263.855	0.000	0.000	0.000
	3600.00	40.350	120.312	76.619	157.292	157.292	-275.830	0.000	0.000	0.000
	3700.00	40.350	121.417	77.815	161.327	161.327	-287.917	0.000	0.000	0.000
	3800.00	40.350	122.493	78.977	165.362	165.362	-300.112	0.000	0.000	0.000
	3900.00	40.350	123.541	80.106	169.397	169.397	-312.414	0.000	0.000	0.000
	4000.00	40.350	124.563	81.205	173.432	173.432	-324.820	0.000	0.000	0.000

Mo

MOLYBDENUM [continued]

95.940

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [—]
LIQ	4100.00	40.350	125.559	82.275	177.467	177.467	-337.326	0.000	0.000	0.000
	4200.00	40.350	126.532	83.317	181.502	181.502	-349.931	0.000	0.000	0.000
	4300.00	40.350	127.481	84.333	185.537	185.537	-362.632	0.000	0.000	0.000
	4400.00	40.350	128.409	85.324	189.572	189.572	-375.426	0.000	0.000	0.000
	4500.00	40.350	129.316	86.292	193.607	193.607	-388.313	0.000	0.000	0.000
	4600.00	40.350	130.202	87.237	197.642	197.642	-401.289	0.000	0.000	0.000
	4700.00	40.350	131.070	88.160	201.677	201.677	-414.353	0.000	0.000	0.000
	4800.00	40.350	131.920	89.063	205.712	205.712	-427.502	0.000	0.000	0.000
	4900.00	40.350	132.752	89.946	209.748	209.748	-440.736	0.000	0.000	0.000
	4978.00	40.350	133.389	90.622	212.895	212.895	-451.115	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL	D1	D1	
LIQ	D1	D1	D1 BPT= 4978., L= 582.2 kJ

95.940											MOLYBDENUM (GAS)		Mo[g]	
Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f				
	[K]	[—————	J / (K mol)	—————]	[—————	kJ / mol	—————]			[- -]				
GAS	298.15	20.786	181.950	181.950	658.499	0.000	604.251	658.499	612.776	-107.356				
	300.00	20.786	182.079	181.951	658.537	0.038	603.914	658.493	612.492	-106.644				
	400.00	20.786	188.059	182.766	660.616	2.117	585.393	658.118	597.212	-77.988				
	500.00	20.786	192.697	184.306	662.695	4.196	566.346	657.647	582.038	-60.805				
	600.00	20.786	196.487	186.030	664.773	6.274	546.881	657.107	566.966	-49.359				
	700.00	20.786	199.691	187.758	666.852	8.353	527.068	656.514	551.988	-41.190				
	800.00	20.786	202.467	189.427	668.931	10.432	506.957	655.873	537.099	-35.069				
	900.00	20.786	204.915	191.015	671.009	12.510	486.586	655.185	522.293	-30.313				
	1000.00	20.786	207.105	192.516	673.088	14.589	465.983	654.450	507.566	-26.513				
	1100.00	20.788	209.086	193.934	675.166	16.667	445.172	653.665	492.916	-23.407				
	1200.00	20.794	210.895	195.273	677.246	18.747	424.171	652.825	478.339	-20.822				
	1300.00	20.804	212.560	196.540	679.325	20.826	402.998	651.925	463.834	-18.637				
	1400.00	20.824	214.102	197.740	681.407	22.908	381.664	650.958	449.402	-16.767				
	1500.00	20.857	215.540	198.879	683.491	24.992	360.181	649.918	435.040	-15.149				
	1600.00	20.910	216.888	199.963	685.579	27.080	338.559	648.799	420.751	-13.736				
	1700.00	20.989	218.157	200.996	687.673	29.174	316.806	647.599	406.535	-12.491				
	1800.00	21.100	219.360	201.983	689.778	31.279	294.929	646.305	392.391	-11.387				
	1900.00	21.249	220.505	202.928	691.895	33.396	272.936	644.951	378.322	-10.401				
	2000.00	21.443	221.599	203.834	694.029	35.530	250.830	643.505	364.325	-9.515				
	2100.00	21.690	222.651	204.706	696.185	37.686	228.617	641.938	350.405	-8.716				
	2200.00	21.990	223.667	205.545	698.369	39.870	206.301	640.282	336.560	-7.991				
	2300.00	22.345	224.652	206.354	700.585	42.086	183.885	638.521	322.794	-7.331				
	2400.00	22.761	225.612	207.136	702.840	44.341	161.371	636.648	309.106	-6.728				
	2500.00	23.244	226.550	207.894	705.139	46.640	138.763	634.656	295.499	-6.174				
	2600.00	23.797	227.473	208.630	707.491	48.992	116.062	632.526	281.974	-5.665				
	2700.00	24.422	228.382	209.344	709.901	51.402	93.269	630.225	268.535	-5.195				
	2800.00	25.121	229.283	210.040	712.378	53.879	70.386	627.713	255.184	-4.761				
	2900.00	25.895	230.178	210.719	714.928	56.429	47.413	585.881	241.968	-4.358				
	3000.00	26.742	231.070	211.383	717.559	59.060	24.350	584.478	230.133	-4.007				
	3100.00	27.662	231.961	212.032	720.279	61.780	1.199	583.162	218.344	-3.679				
	3200.00	28.653	232.855	212.669	723.094	64.595	-22.042	581.942	206.595	-3.372				
	3300.00	29.711	233.753	213.294	726.012	67.513	-45.372	580.825	194.883	-3.085				
	3400.00	30.835	234.656	213.909	729.038	70.539	-68.793	579.817	183.203	-2.815				
	3500.00	32.019	235.567	214.515	732.181	73.682	-92.304	578.924	171.551	-2.560				
	3600.00	33.260	236.486	215.113	735.444	76.945	-115.906	578.152	159.923	-2.320				
	3700.00	34.554	237.415	215.703	738.834	80.335	-139.601	577.507	148.315	-2.094				
	3800.00	35.896	238.354	216.287	742.357	83.858	-163.390	576.995	136.723	-1.879				
	3900.00	37.281	239.305	216.865	746.015	87.516	-187.273	576.618	125.142	-1.676				
	4000.00	38.704	240.266	217.438	749.814	91.315	-211.251	576.382	113.569	-1.483				
	4100.00	40.158	241.240	218.006	753.757	95.258	-235.326	576.290	102.000	-1.299				
	4200.00	41.639	242.225	218.571	757.847	99.348	-259.500	576.344	90.431	-1.125				
	4300.00	43.141	243.223	219.133	762.085	103.586	-283.772	576.548	78.860	-0.958				
	4400.00	44.657	244.232	219.692	766.475	107.976	-308.144	576.903	67.282	-0.799				
	4500.00	46.181	245.252	220.248	771.017	112.518	-332.619	577.410	55.694	-0.646				
	4600.00	47.707	246.284	220.803	775.712	117.213	-357.195	578.069	44.093	-0.501				
	4700.00	49.230	247.326	221.356	780.558	122.059	-381.876	578.881	32.477	-0.361				
	4800.00	50.741	248.379	221.908	785.557	127.058	-406.661	579.845	20.841	-0.227				
	4900.00	52.235	249.440	222.459	790.706	132.207	-431.552	580.958	9.184	-0.098				
	5000.00	53.705	250.510	223.010	796.003	137.504	-456.549	0.000	0.000	0.000				

References

Phase	H / S	C _p
GAS	D1	D1

MoAsO4

MOLYBDENUM ARSENATE

234.859

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
SOL	298.15	120.055	163.009	163.009	-910.689	0.000	-959.290	-910.689	-817.790	143.273
	300.00	120.373	163.752	163.011	-910.467	0.222	-959.592	-910.665	-817.214	142.290
	400.00	132.815	200.267	167.905	-897.744	12.945	-977.851	-908.845	-786.312	102.682
	500.00	140.515	230.782	177.514	-884.055	26.634	-999.446	-906.390	-755.954	78.974
	600.00	146.350	256.935	188.623	-869.702	40.987	-1023.863	-903.596	-726.125	63.215
	700.00	151.303	279.875	200.053	-854.814	55.875	-1050.726	-900.568	-696.783	51.995
	784.00	155.091	297.235	209.549	-841.943	68.746	-1074.976	-897.866	-672.483	44.805

References

Phase	H / S	C _p
SOL	G1	G1

MoC

MOLYBDENUM MONOCARBIDE (GAMMA)

107.951

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
SOL-C	298.15	30.878	36.652	36.652	-28.451	0.000	-39.379	-28.451	-29.142	5.106
	300.00	30.957	36.843	36.652	-28.394	0.057	-39.447	-28.454	-29.146	5.075
	400.00	34.852	46.298	37.915	-25.098	3.353	-43.617	-28.648	-29.349	3.833
	500.00	38.107	54.436	40.424	-21.445	7.006	-48.663	-28.876	-29.499	3.082
	600.00	40.796	61.630	43.370	-17.495	10.956	-54.473	-29.125	-29.600	2.577
	700.00	43.003	68.090	46.448	-13.302	15.149	-60.964	-29.382	-29.659	2.213
	800.00	44.806	73.954	49.525	-8.908	19.543	-68.071	-29.632	-29.681	1.938
	900.00	46.278	79.319	52.542	-4.351	24.100	-75.739	-29.875	-29.673	1.722
	1000.00	47.495	84.260	55.470	0.339	28.790	-83.921	-30.117	-29.638	1.548
	1100.00	48.528	88.836	58.298	5.141	33.592	-92.578	-30.368	-29.578	1.405
	1200.00	49.451	93.099	61.022	10.041	38.492	-101.678	-30.632	-29.494	1.284
	1300.00	50.336	97.092	63.645	15.030	43.481	-111.189	-30.914	-29.388	1.181
	1400.00	51.255	100.855	66.170	20.109	48.560	-121.088	-31.213	-29.260	1.092

References

Phase	H / S	C _p
SOL-C	Pa3	Pa3

203.891

DIMOLYBDENUM CARBIDE

Mo2C

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		[-]
SOL	298.15	60.207	65.814	65.814	-53.137	0.000	-72.760	-53.137	-53.998	9.460
	300.00	60.358	66.187	65.815	-53.025	0.112	-72.882	-53.130	-54.003	9.403
	400.00	66.804	84.503	68.269	-46.643	6.494	-80.445	-52.692	-54.358	7.098
	500.00	71.155	99.905	73.097	-39.733	13.404	-89.686	-52.212	-54.830	5.728
	600.00	74.297	113.171	78.696	-32.452	20.685	-100.355	-51.748	-55.398	4.823
	700.00	76.636	124.808	84.469	-24.900	28.237	-112.266	-51.318	-56.040	4.182
	800.00	78.435	135.163	90.171	-17.143	35.994	-125.274	-50.924	-56.742	3.705
	900.00	79.898	144.489	95.697	-9.224	43.913	-139.264	-50.572	-57.491	3.337
	1000.00	81.210	152.975	101.007	-1.168	51.969	-154.144	-50.263	-58.277	3.044
	1100.00	82.541	160.777	106.090	7.018	60.155	-169.836	-49.993	-59.092	2.806
	1200.00	84.058	168.022	110.953	15.346	68.483	-186.280	-49.747	-59.930	2.609
	1300.00	85.923	174.821	115.607	23.841	76.978	-203.426	-49.503	-60.788	2.442
	1400.00	88.296	181.272	120.069	32.548	85.685	-221.233	-49.223	-61.666	2.301

References

Phase	H / S	C _p
SOL	Pa3	Pa3

264.002

MOLYBDENUM HEXACARBONYL

Mo(CO)6

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		[-]
SOL	298.15	242.260	325.900	325.900	-982.801	0.000	-1079.968	-982.801	-877.680	153.766
	300.00	242.546	327.400	325.905	-982.353	0.448	-1080.572	-982.655	-877.028	152.704
	400.00	258.027	399.296	335.603	-957.324	25.477	-1117.042	-975.215	-842.962	110.080

References

Phase	H / S	C _p
SOL	Nb1	Ku1,e

Mo(CO)₆[g]

MOLYBDENUM HEXACARBONYL (GAS)

264.002

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
GAS	298.15	211.290	490.110	490.110	-912.099	0.000	-1058.225	-912.099	-855.937	149.957
	300.00	211.976	491.419	490.114	-911.707	0.392	-1059.133	-912.010	-855.589	148.971
	400.00	237.682	556.357	498.794	-889.074	23.025	-1111.616	-906.965	-837.536	109.371
	500.00	252.045	611.058	515.926	-864.533	47.566	-1170.062	-902.138	-820.749	85.743
	600.00	261.944	657.931	535.781	-838.809	73.290	-1233.568	-897.992	-804.873	70.070
	700.00	269.734	698.913	556.219	-812.213	99.886	-1301.453	-894.501	-789.637	58.923
	800.00	276.400	735.376	576.377	-784.900	127.199	-1373.200	-891.462	-774.868	50.594
	900.00	282.414	768.283	595.901	-756.955	155.144	-1448.410	-888.696	-760.462	44.136
	1000.00	288.021	798.331	614.663	-728.430	183.669	-1526.762	-886.087	-746.355	38.986
	1100.00	293.364	826.035	632.635	-699.359	212.740	-1607.998	-883.541	-732.505	34.784
	1200.00	298.526	851.783	649.837	-669.764	242.335	-1691.904	-880.984	-718.887	31.292
	1300.00	303.561	875.878	666.308	-639.658	272.441	-1778.299	-878.358	-705.484	28.347
	1400.00	308.503	898.555	682.095	-609.055	303.044	-1867.032	-875.617	-692.288	25.830
	1500.00	313.378	920.006	697.247	-577.960	334.139	-1957.970	-872.726	-679.293	23.655
	1600.00	318.200	940.386	711.812	-546.381	365.718	-2050.998	-869.659	-666.497	21.759
	1700.00	322.982	959.820	725.833	-514.321	397.778	-2146.015	-866.394	-653.898	20.092
	1800.00	327.733	978.416	739.353	-481.785	430.314	-2242.934	-862.927	-641.497	18.616
	1900.00	332.459	996.262	752.408	-448.776	463.323	-2341.674	-859.214	-629.296	17.301
	2000.00	337.165	1013.435	765.032	-415.294	496.805	-2442.164	-855.284	-617.296	16.122

References

Phase	H / S	C _p
GAS	Nb1	e

Mo₂N

DIMOLYBDENUM NITRIDE

205.887

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
SOL	298.15	63.848	63.178	63.178	-81.588	0.000	-100.425	-81.588	-54.810	9.603
	300.00	64.060	63.574	63.180	-81.470	0.118	-100.542	-81.585	-54.644	9.514
	400.00	72.714	83.297	65.810	-74.593	6.995	-107.912	-81.074	-45.724	5.971
	500.00	78.401	100.168	71.036	-67.022	14.566	-117.106	-80.073	-36.994	3.865
	600.00	82.772	114.863	77.142	-58.956	22.632	-127.873	-78.735	-28.499	2.481
	700.00	86.420	127.903	83.480	-50.492	31.096	-140.024	-77.135	-20.249	1.511
	800.00	89.600	139.655	89.779	-41.687	39.901	-153.411	-75.325	-12.244	0.799
	900.00	92.435	150.375	95.925	-32.583	49.005	-167.920	-73.343	-4.476	0.260
	1000.00	94.992	160.248	101.870	-23.210	58.378	-183.458	-71.217	3.063	-0.160
	1100.00	97.309	169.413	107.599	-13.593	67.995	-199.946	-68.976	10.384	-0.493
	1200.00	99.408	177.971	113.110	-3.755	77.833	-217.320	-66.650	17.496	-0.762
	1300.00	101.305	186.004	118.412	6.282	87.870	-235.523	-64.269	24.412	-0.981
	1400.00	103.009	193.575	123.513	16.500	98.088	-254.506	-61.865	31.143	-1.162

References

Phase	H / S	C _p
SOL	Nb1/Pa3	Pa3

111.939

MOLYBDENUM MONOXIDE (GAS)

MoO[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [—]
GAS	298.15	36.003	241.765	241.765	310.959	0.000	238.877	310.959	277.984	-48.702
	300.00	36.013	241.987	241.765	311.026	0.067	238.429	310.954	277.780	-48.366
	400.00	36.391	252.406	243.183	314.648	3.689	213.686	310.637	266.766	-34.836
	500.00	36.604	260.551	245.872	318.299	7.340	188.023	310.209	255.846	-26.728
	600.00	36.752	267.238	248.892	321.967	11.008	161.624	309.679	245.021	-21.331
	700.00	36.870	272.913	251.929	325.648	14.689	134.609	309.061	234.293	-17.483
	800.00	36.972	277.843	254.866	329.340	18.381	107.066	308.365	223.658	-14.603
	900.00	37.063	282.203	257.666	333.042	22.083	79.059	307.597	213.115	-12.369
	1000.00	37.149	286.112	260.319	336.753	25.794	50.640	306.763	202.661	-10.586
	1100.00	37.231	289.657	262.827	340.472	29.513	21.849	305.864	192.294	-9.131
	1200.00	37.311	292.900	265.200	344.199	33.240	-7.281	304.898	182.012	-7.923
	1300.00	37.388	295.890	267.447	347.934	36.975	-36.722	303.862	171.813	-6.904
	1400.00	37.465	298.663	269.579	351.677	40.718	-66.452	302.750	161.696	-6.033
	1500.00	37.540	301.250	271.605	355.427	44.468	-96.449	301.555	151.662	-5.281
	1600.00	37.615	303.676	273.535	359.185	48.226	-126.696	300.272	141.711	-4.626
	1700.00	37.689	305.958	275.375	362.950	51.991	-157.179	298.897	131.842	-4.051
	1800.00	37.762	308.115	277.135	366.722	55.763	-187.884	297.413	122.058	-3.542
	1900.00	37.835	310.158	278.820	370.502	59.543	-218.798	295.852	112.358	-3.089
	2000.00	37.908	312.101	280.436	374.289	63.330	-249.912	294.177	102.743	-2.683

References

Phase	H / S	C _p
GAS	Pa1	Pa1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	55.982	46.275	46.275	-588.940	0.000	-602.737	-588.940	-533.047	93.388
	300.00	56.160	46.622	46.276	-588.836	0.104	-602.823	-588.935	-532.700	92.751
	400.00	63.360	63.860	48.578	-582.827	6.113	-608.371	-588.350	-514.029	67.125
	500.00	67.983	78.524	53.138	-576.247	12.693	-615.509	-587.379	-495.555	51.770
	600.00	71.493	91.241	58.452	-569.267	19.673	-624.011	-586.176	-477.300	41.553
	700.00	74.420	102.487	63.954	-561.967	26.973	-633.708	-584.804	-459.261	34.270
	800.00	77.003	112.596	69.413	-554.394	34.546	-644.471	-583.287	-441.428	28.822
	900.00	79.371	121.804	74.730	-546.574	42.366	-656.197	-581.639	-423.793	24.596
	1000.00	81.607	130.283	79.867	-538.524	50.416	-668.807	-579.865	-406.349	21.225
	1100.00	83.767	138.163	84.813	-530.255	58.685	-682.234	-577.969	-389.088	18.476
	1200.00	85.896	145.543	89.569	-521.772	67.168	-696.423	-575.953	-372.005	16.193
	1300.00	88.034	152.502	94.145	-513.076	75.864	-711.328	-573.819	-355.095	14.268
	1400.00	90.215	159.106	98.551	-504.164	84.776	-726.912	-571.569	-338.354	12.624
	1500.00	92.470	165.406	102.800	-495.030	93.910	-743.140	-569.201	-321.777	11.205
	1600.00	94.830	171.449	106.903	-485.666	103.274	-759.984	-566.711	-305.363	9.969
	1700.00	97.324	177.272	110.872	-476.060	112.880	-777.422	-564.091	-289.108	8.883
	1800.00	99.980	182.909	114.718	-466.196	122.744	-795.432	-561.342	-273.011	7.923
	1900.00	102.827	188.390	118.452	-456.057	132.883	-813.999	-558.414	-257.072	7.067
	2000.00	105.892	193.741	122.083	-445.623	143.317	-833.106	-555.323	-241.291	6.302

References

Phase	H / S	C _p
SOL	Pa1	Pa1

127.939

MOLYBDENUM DIOXIDE (GAS)

MoO₂[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	43.587	276.990	276.990	-8.314	0.000	-90.899	-8.314	-21.209	3.716
	300.00	43.655	277.260	276.991	-8.233	0.081	-91.411	-8.332	-21.289	3.707
	400.00	47.355	290.337	278.748	-3.679	4.635	-119.813	-9.202	-25.471	3.326
	500.00	50.104	301.219	282.185	1.203	9.517	-149.406	-9.929	-29.453	3.077
	600.00	51.967	310.530	286.152	6.313	14.627	-180.005	-10.597	-33.294	2.899
	700.00	53.259	318.643	290.226	11.578	19.892	-211.472	-11.259	-37.025	2.763
	800.00	54.189	325.819	294.236	16.953	25.267	-243.702	-11.941	-40.660	2.655
	900.00	54.885	332.243	298.108	22.408	30.722	-276.611	-12.657	-44.207	2.566
	1000.00	55.423	338.055	301.817	27.924	36.238	-310.131	-13.417	-47.672	2.490
	1100.00	55.852	343.358	305.356	33.489	41.803	-344.205	-14.225	-51.059	2.425
	1200.00	56.203	348.233	308.728	39.092	47.406	-378.788	-15.089	-54.370	2.367
	1300.00	56.498	352.744	311.943	44.727	53.041	-413.840	-16.016	-57.606	2.315
	1400.00	56.750	356.940	315.009	50.390	58.704	-449.326	-17.015	-60.768	2.267
	1500.00	56.971	360.863	317.937	56.076	64.390	-485.219	-18.095	-63.856	2.224
	1600.00	57.166	364.547	320.736	61.783	70.097	-521.491	-19.262	-66.870	2.183
	1700.00	57.342	368.018	323.416	67.509	75.823	-558.121	-20.523	-69.807	2.145
	1800.00	57.503	371.300	325.986	73.251	81.565	-595.088	-21.895	-72.667	2.109
	1900.00	57.651	374.413	328.453	79.009	87.323	-632.375	-23.347	-75.448	2.074
	2000.00	57.789	377.374	330.826	84.781	93.095	-669.966	-24.918	-78.151	2.041
	2100.00	57.918	380.196	333.110	90.567	98.881	-707.845	-26.641	-80.770	2.009
	2200.00	58.040	382.893	335.312	96.365	104.679	-746.001	-28.491	-83.305	1.978
	2300.00	58.157	385.476	337.438	102.174	110.488	-784.420	-30.490	-85.753	1.948
	2400.00	58.269	387.954	339.491	107.996	116.310	-823.093	-32.648	-88.110	1.918
	2500.00	58.376	390.334	341.478	113.828	122.142	-862.008	-34.982	-90.373	1.888
	2600.00	58.480	392.626	343.401	119.671	127.985	-901.157	-37.518	-92.540	1.859
	2700.00	58.581	394.835	345.265	125.524	133.838	-940.530	-40.293	-94.604	1.830
	2800.00	58.679	396.967	347.074	131.387	139.701	-980.121	-43.357	-96.560	1.801
	2900.00	58.775	399.028	348.830	137.260	145.574	-1019.921	-45.823	-98.361	1.772
	3000.00	58.869	401.022	350.537	143.142	151.456	-1059.924	-47.953	-98.757	1.720

References

Phase	H / S	C _p
GAS	Ja1	Ja1

MoO3

MOLYBDENUM TRIOXIDE

143.938

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	75.032	77.739	77.739	-745.087	0.000	-768.265	-745.087	-667.993	117.030
	300.00	75.214	78.203	77.740	-744.948	0.139	-768.409	-745.074	-667.514	116.225
	400.00	82.749	100.961	80.792	-737.019	8.068	-777.404	-744.055	-641.800	83.811
	500.00	87.990	120.014	86.782	-728.471	16.616	-788.478	-742.646	-616.394	64.394
	600.00	92.327	136.448	93.721	-719.451	25.636	-801.320	-740.982	-591.296	51.477
	700.00	96.238	150.978	100.882	-710.020	35.067	-815.705	-739.106	-566.493	42.272
	800.00	99.922	164.071	107.976	-700.211	44.876	-831.468	-737.021	-541.974	35.387
	900.00	103.473	176.046	114.883	-690.040	55.047	-848.482	-734.726	-517.729	30.048
	1000.00	106.943	187.129	121.560	-679.519	65.568	-866.647	-732.211	-493.751	25.791
	1075.00	109.509	194.955	126.410	-671.402	73.685	-880.978	-730.179	-475.940	23.126
LIQ			45.499		48.911					
	1075.00	126.231	240.453	126.410	-622.491	122.596	-880.978	-681.268	-475.940	23.126
	1100.00	126.231	243.355	129.035	-619.335	125.752	-887.025	-680.155	-471.178	22.374
	1200.00	126.231	254.339	139.026	-606.712	138.375	-911.918	-675.773	-452.374	19.691
	1300.00	126.231	264.443	148.290	-594.088	150.999	-937.864	-671.504	-433.932	17.436
	1400.00	126.231	273.797	156.925	-581.465	163.622	-964.782	-667.350	-415.813	15.514

References

Phase	H / S	C _p	Remarks
SOL	Pa1	Ja1	
LIQ	Pa1	Ja1	H5 NBPT= 1428. GAS (Mo3O9 + Mo4O12 + Mo5O15)

143.938

MOLYBDENUM TRIOXIDE (GAS)

MoO₃[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H ₂₉₈)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H ₂₉₈ [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
GAS	298.15	59.446	283.898	283.898	–346.435	0.000	–431.079	–346.435	–330.807	57.956
	300.00	59.671	284.266	283.899	–346.325	0.110	–431.605	–346.451	–330.710	57.582
	400.00	67.770	302.697	286.357	–339.899	6.536	–460.978	–346.935	–325.374	42.490
	500.00	71.807	318.297	291.228	–332.901	13.534	–492.049	–347.075	–319.964	33.426
	600.00	74.228	331.619	296.877	–325.590	20.845	–524.561	–347.122	–314.537	27.383
	700.00	75.870	343.191	302.685	–318.080	28.355	–558.314	–347.166	–309.103	23.066
	800.00	77.084	353.405	308.399	–310.430	36.005	–593.154	–347.241	–303.661	19.827
	900.00	78.035	362.541	313.916	–302.672	43.763	–628.960	–347.358	–298.207	17.307
	1000.00	78.814	370.805	319.199	–294.829	51.606	–665.634	–347.521	–292.737	15.291
	1100.00	79.468	378.348	324.238	–286.914	59.521	–703.097	–347.733	–287.249	13.640
	1200.00	80.029	385.287	329.040	–278.938	67.497	–741.283	–348.000	–281.739	12.264
	1300.00	80.516	391.713	333.617	–270.910	75.525	–780.137	–348.326	–276.205	11.098
	1400.00	80.940	397.696	337.983	–262.837	83.598	–819.611	–348.721	–270.643	10.098
	1500.00	81.311	403.293	342.152	–254.724	91.711	–859.663	–349.194	–265.050	9.230
	1600.00	81.633	408.551	346.139	–246.577	99.858	–900.258	–349.754	–259.422	8.469
	1700.00	81.913	413.509	349.958	–238.399	108.036	–941.364	–350.409	–253.757	7.797
	1800.00	82.151	418.198	353.620	–230.195	116.240	–982.951	–351.178	–248.050	7.198
	1900.00	82.352	422.645	357.137	–221.970	124.465	–1024.995	–352.033	–242.298	6.661
	2000.00	82.516	426.873	360.519	–213.726	132.709	–1067.473	–353.014	–236.497	6.177
	2100.00	82.644	430.902	363.775	–205.468	140.967	–1110.363	–354.156	–230.644	5.737
	2200.00	82.739	434.749	366.915	–197.198	149.237	–1153.647	–355.439	–224.733	5.336
	2300.00	82.800	438.429	369.944	–188.921	157.514	–1197.307	–356.885	–218.760	4.968
	2400.00	82.829	441.953	372.872	–180.639	165.796	–1241.328	–358.510	–212.721	4.630
	2500.00	82.825	445.335	375.703	–172.357	174.078	–1285.693	–360.331	–206.609	4.317
	2600.00	82.790	448.583	378.444	–164.076	182.359	–1330.390	–362.376	–200.421	4.027
	2700.00	82.723	451.706	381.100	–155.800	190.635	–1375.406	–364.687	–194.149	3.756
	2800.00	82.625	454.713	383.676	–147.532	198.903	–1420.727	–367.315	–187.786	3.503
	2900.00	82.496	457.610	386.176	–139.276	207.159	–1466.344	–409.377	–181.282	3.265
	3000.00	82.337	460.404	388.604	–131.034	215.401	–1512.246	–411.135	–173.387	3.019

References

Phase	H / S	C _p
GAS	Ja1	Ja1

MoO2Cl2

MOLYBDENUM DICHLORIDE DIOXIDE

198.844

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
SOL	298.15	104.381	142.256	142.256	-717.100	0.000	-759.514	-717.100	-623.302	109.200
	300.00	104.581	142.902	142.258	-716.907	0.193	-759.777	-717.068	-622.720	108.425
	400.00	115.120	174.441	146.487	-705.918	11.182	-775.695	-714.972	-591.566	77.251
	500.00	125.407	201.237	154.819	-693.891	23.209	-794.509	-712.124	-561.028	58.610
	600.00	135.596	225.003	164.570	-680.840	36.260	-815.842	-708.486	-531.137	46.240

References

Phase	H / S	C _p
SOL	Nb1/e	e

MoO2Cl2[g]

MOLYBDENUM DICHLORIDE DIOXIDE (GAS)

198.844

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
GAS	298.15	85.225	337.758	337.758	-633.039	0.000	-733.742	-633.039	-597.530	104.685
	300.00	85.373	338.286	337.760	-632.881	0.158	-734.367	-633.043	-597.309	104.001
	400.00	92.172	363.840	341.198	-623.982	9.057	-769.518	-633.035	-585.389	76.444
	500.00	96.596	384.919	347.896	-614.527	18.512	-806.987	-632.760	-573.506	59.914
	600.00	99.475	402.803	355.595	-604.714	28.325	-846.396	-632.360	-561.691	48.900
	700.00	101.430	418.293	363.470	-594.663	38.376	-887.468	-631.912	-549.948	41.038
	800.00	102.813	431.932	371.192	-584.447	48.592	-929.993	-631.458	-538.270	35.145
	900.00	103.823	444.103	378.630	-574.113	58.926	-973.806	-631.022	-526.648	30.566
	1000.00	104.580	455.083	385.735	-563.691	69.348	-1018.774	-630.617	-515.073	26.905
	1100.00	105.159	465.079	392.500	-553.203	79.836	-1064.790	-630.255	-503.537	23.911
	1200.00	105.608	474.249	398.936	-542.663	90.376	-1111.762	-629.947	-492.031	21.418
	1300.00	105.961	482.717	405.059	-532.084	100.955	-1159.616	-629.704	-480.548	19.309
	1400.00	106.241	490.580	410.890	-521.473	111.566	-1208.286	-629.536	-469.081	17.502
	1500.00	106.467	497.918	416.450	-510.838	122.201	-1257.714	-629.454	-457.624	15.936
	1600.00	106.651	504.795	421.759	-500.181	132.858	-1307.854	-629.468	-446.169	14.566
	1700.00	106.805	511.266	426.836	-489.508	143.531	-1358.660	-629.585	-434.709	13.357
	1800.00	106.938	517.374	431.698	-478.821	154.218	-1410.095	-629.822	-423.240	12.282
	1900.00	107.057	523.159	436.361	-468.121	164.918	-1462.124	-630.150	-411.754	11.320
	2000.00	107.170	528.654	440.839	-457.410	175.629	-1514.717	-630.607	-400.249	10.453

References

Phase	H / S	C _p
GAS	Ja1	Ja1

160.072

MOLYBDENUM DISULFIDE

MoS₂

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	63.548	62.593	62.593	-276.144	0.000	-294.806	-276.144	-267.166	46.806
	300.00	63.689	62.986	62.594	-276.026	0.118	-294.922	-276.155	-267.110	46.508
	400.00	68.914	82.116	65.167	-269.364	6.780	-302.211	-281.109	-263.837	34.454
	500.00	71.734	97.822	70.175	-262.320	13.824	-311.232	-284.419	-259.178	27.076
	600.00	73.608	111.076	75.916	-255.048	21.096	-321.694	-286.917	-253.876	22.102
	700.00	75.036	122.534	81.776	-247.613	28.531	-333.387	-288.773	-248.219	18.522
	800.00	76.225	132.633	87.514	-240.049	36.095	-346.155	-290.648	-242.301	15.821
	900.00	77.275	141.673	93.038	-232.373	43.771	-359.879	-398.152	-233.835	13.571
	1000.00	78.240	149.865	98.318	-224.597	51.547	-374.462	-396.860	-215.646	11.264
	1100.00	79.149	157.365	103.350	-216.727	59.417	-389.829	-395.538	-197.589	9.383
	1200.00	80.019	164.290	108.143	-208.768	67.376	-405.916	-394.195	-179.653	7.820
	1300.00	80.862	170.728	112.713	-200.724	75.420	-422.670	-392.838	-161.829	6.502
	1400.00	81.686	176.751	117.074	-192.596	83.548	-440.048	-391.477	-144.110	5.377
	1500.00	82.491	182.414	121.243	-184.387	91.757	-458.009	-390.120	-126.489	4.405
	1600.00	83.284	187.763	125.235	-176.098	100.046	-476.520	-388.775	-108.957	3.557
	1700.00	84.068	192.836	129.064	-167.731	108.413	-495.552	-387.447	-91.509	2.812
	1800.00	84.845	197.663	132.742	-159.285	116.859	-515.079	-386.153	-74.139	2.151
	1900.00	85.615	202.271	136.281	-150.762	125.382	-535.077	-384.862	-56.840	1.563
	2000.00	86.381	206.682	139.691	-142.162	133.982	-555.527	-383.612	-39.608	1.034
	2023.00	86.556	207.671	140.459	-140.173	135.971	-560.292	-383.335	-35.654	0.921

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 MPT= 2023. at p(S ₂) = 1.013 bar

192.138

MOLYBDENUM TRISULFIDE

MoS₃

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	82.597	75.312	75.312	-309.616	0.000	-332.070	-309.616	-294.873	51.660
	300.00	82.779	75.823	75.314	-309.463	0.153	-332.210	-309.634	-294.781	51.326
	400.00	90.314	100.757	78.662	-300.778	8.838	-341.081	-317.146	-289.430	37.796
	500.00	95.554	121.498	85.213	-291.474	18.142	-352.222	-322.098	-281.988	29.459
	600.00	99.891	139.312	92.779	-281.696	27.920	-365.283	-325.667	-273.599	23.819
	700.00	103.802	155.007	100.569	-271.509	38.107	-380.014	-328.080	-264.723	19.754
	800.00	107.486	169.111	108.270	-260.943	48.673	-396.232	-330.314	-255.521	16.684
	900.00	111.038	181.977	115.755	-250.016	59.600	-413.795	-490.773	-242.584	14.079
	1000.00	114.507	193.856	122.978	-238.739	70.877	-432.594	-487.814	-215.163	11.239

References

Phase	H / S	C _p
SOL	Mi1	e

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	109.295	114.976	114.976	-407.103	0.000	-441.383	-407.103	-395.660	69.318
	300.00	109.489	115.653	114.978	-406.901	0.202	-441.597	-407.116	-395.589	68.878
	400.00	117.464	148.340	119.381	-395.520	11.583	-454.855	-414.385	-391.385	51.110
	500.00	122.926	175.164	127.935	-383.488	23.615	-471.070	-419.160	-385.144	40.236
	600.00	127.399	197.982	137.754	-370.966	36.137	-489.755	-422.603	-377.987	32.907
	700.00	131.405	217.925	147.812	-358.024	49.079	-510.571	-424.932	-370.360	27.637
	800.00	135.163	235.719	157.708	-344.694	62.409	-533.269	-427.122	-362.416	23.663
	900.00	138.775	251.849	167.285	-330.996	76.107	-557.660	-587.577	-350.741	20.356
	1000.00	142.298	266.653	176.492	-316.942	90.161	-583.595	-584.656	-324.580	16.954
	1100.00	145.762	280.379	185.320	-302.538	104.565	-610.955	-581.506	-298.723	14.185
	1200.00	149.186	293.209	193.781	-287.791	119.312	-639.641	-578.141	-273.162	11.890
	1300.00	152.582	305.284	201.899	-272.702	134.401	-669.571	-574.574	-247.891	9.960
	1400.00	155.957	316.715	209.695	-257.275	149.828	-700.676	-570.820	-222.901	8.317
	1500.00	159.317	327.590	217.195	-241.511	165.592	-732.896	-566.897	-198.186	6.901
	1600.00	162.666	337.979	224.422	-225.412	181.691	-766.178	-562.816	-173.737	5.672
	1700.00	166.006	347.941	231.397	-208.978	198.125	-800.477	-558.589	-149.549	4.595
	1800.00	169.339	357.524	238.139	-192.211	214.892	-835.753	-554.249	-125.612	3.645
	1900.00	172.667	366.769	244.667	-175.110	231.993	-871.971	-549.732	-101.921	2.802
	2000.00	175.990	375.710	250.997	-157.678	249.425	-909.097	-545.114	-78.471	2.049
	2080.00	178.645	382.664	255.928	-143.492	263.611	-939.433	-541.397	-59.879	1.504
LIQ			0.062		0.130					
	2080.00	156.900	382.726	255.928	-143.362	263.741	-939.433	-541.267	-59.879	1.504
	2100.00	156.900	384.228	257.143	-140.224	266.879	-947.103	-540.771	-55.253	1.374
	2200.00	156.900	391.527	263.086	-124.534	282.569	-985.893	-538.436	-32.188	0.764

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Mi1	Ja1 1/2 Mo + 3/2 MoS2 = Mo2S3, L= 9.652 kJ at T= 900.
LIQ	Ja1	Ja1	Ja1 NDPT= 2140.

Phase	T	C _p	S	–(G–H298)/T	H	H–H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[–]
SOL	298.15	64.851	65.015	65.015	–118.826	0.000	–138.210	–118.826	–118.463	20.754
	300.00	64.964	65.417	65.016	–118.706	0.120	–138.331	–118.824	–118.461	20.626
	400.00	69.355	84.773	67.626	–111.967	6.859	–145.876	–118.784	–118.348	15.455
	500.00	72.030	100.555	72.682	–104.890	13.936	–155.167	–118.814	–118.237	12.352
	600.00	74.030	113.871	78.466	–97.583	21.243	–165.905	–118.879	–118.116	10.283
	700.00	75.711	125.411	84.366	–90.094	28.732	–177.882	–118.960	–117.982	8.804
	800.00	77.222	135.621	90.147	–82.447	36.379	–190.944	–119.049	–117.837	7.694
	900.00	78.634	144.799	95.718	–74.653	44.173	–204.972	–119.144	–117.680	6.830
	1000.00	79.986	153.154	101.050	–66.722	52.104	–219.876	–119.246	–117.512	6.138
	1100.00	81.297	160.839	106.141	–58.657	60.169	–235.581	–119.355	–117.333	5.572
	1200.00	82.580	167.968	110.999	–50.463	68.363	–252.025	–119.478	–117.144	5.099
	1300.00	83.845	174.628	115.641	–42.142	76.684	–269.159	–119.620	–116.944	4.699
	1400.00	85.095	180.888	120.080	–33.695	85.131	–286.938	–119.789	–116.732	4.355
	1500.00	86.336	186.801	124.333	–25.123	93.703	–305.325	–119.991	–116.506	4.057
	1600.00	87.568	192.412	128.414	–16.428	102.398	–324.288	–120.234	–116.266	3.796
	1700.00	88.794	197.758	132.337	–7.610	111.216	–343.798	–220.877	–115.116	3.537
	1800.00	90.016	202.868	136.114	1.331	120.157	–363.832	–220.775	–108.898	3.160
	1900.00	91.234	207.768	139.757	10.393	129.219	–384.365	–220.622	–102.686	2.823
	2000.00	92.449	212.478	143.276	19.577	138.403	–405.379	–220.458	–96.483	2.520
	2100.00	93.661	217.018	146.680	28.883	147.709	–426.855	–220.314	–90.288	2.246
	2200.00	94.871	221.403	149.978	38.310	157.136	–448.777	–220.166	–84.100	1.997
	2293.00	95.995	225.354	152.955	47.185	166.011	–469.552	–220.044	–78.351	1.785

References

Phase	H / S	C _p	Remarks
SOL	Tk1,C1	Tk1,C1	Tk1 MPT= 2293.

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	92.968	106.274	106.274	-101.671	0.000	-133.356	-101.671	-102.170	17.900
	300.00	93.006	106.849	106.275	-101.499	0.172	-133.554	-101.669	-102.173	17.790
	400.00	95.117	133.891	109.948	-92.094	9.577	-145.650	-101.747	-102.339	13.364
	500.00	97.313	155.351	116.954	-82.473	19.198	-160.148	-102.055	-102.454	10.703
	600.00	99.541	173.289	124.888	-72.630	29.041	-176.604	-102.443	-102.498	8.923
	700.00	101.786	188.802	132.935	-62.564	39.107	-194.726	-102.841	-102.476	7.647
	800.00	104.039	202.541	140.793	-52.273	49.398	-214.306	-103.218	-102.398	6.686
	900.00	106.296	214.925	148.353	-41.756	59.915	-235.189	-103.562	-102.274	5.936
	1000.00	108.557	226.241	155.584	-31.014	70.657	-257.255	-103.871	-102.114	5.334
	1100.00	110.819	236.694	162.488	-20.045	81.626	-280.408	-104.148	-101.925	4.840
	1200.00	113.083	246.434	169.083	-8.850	92.821	-304.570	-104.408	-101.711	4.427
	1300.00	115.348	255.575	175.388	2.572	104.243	-329.675	-104.667	-101.476	4.077
	1400.00	117.614	264.206	181.426	14.220	115.891	-355.668	-104.948	-101.220	3.777
	1500.00	119.880	272.398	187.220	26.095	127.766	-382.502	-105.271	-100.943	3.515
	1600.00	122.146	280.207	192.790	38.196	139.867	-410.135	-105.656	-100.642	3.286
	1700.00	124.413	287.680	198.153	50.524	152.195	-438.532	-156.295	-99.868	3.069
	1800.00	126.680	294.855	203.328	63.079	164.750	-467.661	-156.656	-96.539	2.801
	1900.00	128.947	301.765	208.328	75.860	177.531	-497.494	-157.007	-93.190	2.562
	2000.00	131.214	308.437	213.168	88.868	190.539	-528.006	-157.460	-89.820	2.346
	2100.00	133.482	314.894	217.859	102.103	203.774	-559.174	-158.112	-86.423	2.150
	2200.00	135.749	321.156	222.412	115.564	217.235	-590.978	-158.889	-82.991	1.970
	2300.00	138.017	327.240	226.838	129.252	230.923	-623.399	-159.855	-79.520	1.806
	2303.00	138.085	327.420	226.969	129.667	231.338	-624.381	-159.887	-79.416	1.801

References

Phase	H / S	C _p	Remarks
SOL	Tk1,e	Tk1,C1	C1 DPT= 2303.

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [—]
SOL	298.15	205.851	207.342	207.342	-302.503	0.000	-364.322	-302.503	-304.863	53.411
	300.00	206.082	208.616	207.346	-302.122	0.381	-364.707	-302.454	-304.878	53.084
	400.00	215.420	269.301	215.557	-281.005	21.498	-388.726	-299.972	-306.068	39.968
	500.00	221.624	318.071	231.341	-259.138	43.365	-418.174	-297.692	-307.858	32.162
	600.00	226.594	358.929	249.292	-236.720	65.783	-452.078	-295.495	-310.098	26.996
	700.00	230.983	394.194	267.530	-213.838	88.665	-489.774	-293.318	-312.704	23.334
	800.00	235.061	425.306	285.345	-190.534	111.969	-530.779	-291.139	-315.623	20.608
	900.00	238.958	453.219	302.473	-166.832	135.671	-574.729	-288.954	-318.814	18.503
	1000.00	242.744	478.592	318.835	-142.746	159.757	-621.338	-286.766	-322.249	16.833
	1100.00	246.456	501.903	334.432	-118.286	184.217	-670.378	-284.589	-325.903	15.476
	1200.00	250.119	523.504	349.299	-93.457	209.046	-721.662	-282.450	-329.754	14.354
	1300.00	253.746	543.668	363.483	-68.263	234.240	-775.031	-280.380	-333.780	13.411
	1400.00	257.348	562.605	377.037	-42.708	259.795	-830.355	-278.418	-337.963	12.610
	1500.00	260.931	580.482	390.009	-16.794	285.709	-887.517	-276.600	-342.280	11.919
	1600.00	264.500	597.436	402.448	9.478	311.981	-946.420	-274.960	-346.713	11.319
	1700.00	268.057	613.578	414.397	36.106	338.609	-1006.977	-424.056	-349.903	10.751
	1800.00	271.606	629.000	425.894	63.089	365.592	-1069.112	-422.223	-345.594	10.029
	1900.00	275.148	643.780	436.975	90.427	392.930	-1132.756	-420.400	-341.387	9.385
	2000.00	278.685	657.983	447.673	118.118	420.621	-1197.849	-418.768	-337.272	8.809
	2100.00	282.217	671.666	458.015	146.163	448.666	-1264.335	-417.495	-333.229	8.289
	2200.00	285.745	684.876	468.029	174.562	477.065	-1332.166	-416.454	-329.242	7.817
	2300.00	289.270	697.656	477.736	203.312	505.815	-1401.296	-415.752	-325.295	7.388
	2400.00	292.793	710.042	487.159	232.416	534.919	-1471.684	-415.443	-321.371	6.994
	2453.00	294.659	716.457	492.044	247.983	550.486	-1509.487	-415.463	-319.293	6.799

References

Phase	H / S	C _p	Remarks
SOL	Tk1/C1	Tk1,C1	Tk1 MPT= 2453.

N[g]

NITROGEN (GAS)

14.007

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			kJ / mol			[—————]		[-]
GAS	298.15	20.786	153.300	153.300	472.683	0.000	426.977	472.683	455.541	-79.809
	300.00	20.786	153.429	153.300	472.721	0.038	426.693	472.695	455.434	-79.298
	400.00	20.786	159.408	154.116	474.800	2.117	411.037	473.314	449.587	-58.710
	500.00	20.786	164.047	155.655	476.879	4.196	394.855	473.923	443.585	-46.341
	600.00	20.786	167.836	157.379	478.957	6.274	378.255	474.510	437.461	-38.084
	700.00	20.786	171.041	159.108	481.036	8.353	361.307	475.067	431.242	-32.180
	800.00	20.786	173.816	160.777	483.114	10.431	344.062	475.591	424.945	-27.746
	900.00	20.786	176.264	162.364	485.193	12.510	326.555	476.082	418.585	-24.294
	1000.00	20.786	178.454	163.866	487.272	14.589	308.817	476.540	412.171	-21.530
	1100.00	20.786	180.435	165.283	489.350	16.667	290.871	476.970	405.713	-19.266
	1200.00	20.786	182.244	166.623	491.429	18.746	272.736	477.375	399.217	-17.377
	1300.00	20.786	183.908	167.889	493.507	20.824	254.427	477.756	392.689	-15.778
	1400.00	20.786	185.448	169.089	495.586	22.903	235.958	478.118	386.131	-14.407
	1500.00	20.786	186.882	170.228	497.665	24.982	217.341	478.462	379.549	-13.217
	1600.00	20.786	188.224	171.311	499.743	27.060	198.585	478.791	372.944	-12.175
	1700.00	20.786	189.484	172.343	501.822	29.139	179.699	479.107	366.319	-11.256
	1800.00	20.787	190.672	173.329	503.900	31.217	160.691	479.411	359.675	-10.438
	1900.00	20.788	191.796	174.272	505.979	33.296	141.567	479.705	353.015	-9.705
	2000.00	20.790	192.862	175.175	508.058	35.375	122.333	479.990	346.340	-9.045
	2100.00	20.793	193.877	176.041	510.137	37.454	102.996	480.266	339.651	-8.448
	2200.00	20.797	194.844	176.874	512.217	39.534	83.560	480.536	332.948	-7.905
	2300.00	20.804	195.769	177.676	514.297	41.614	64.029	480.800	326.234	-7.409
	2400.00	20.813	196.654	178.448	516.378	43.695	44.407	481.058	319.508	-6.954
	2500.00	20.826	197.504	179.194	518.460	45.777	24.699	481.311	312.771	-6.535
	2600.00	20.843	198.321	179.914	520.543	47.860	4.907	481.562	306.025	-6.148
	2700.00	20.864	199.108	180.610	522.628	49.945	-14.964	481.809	299.269	-5.790
	2800.00	20.891	199.868	181.284	524.716	52.033	-34.913	482.054	292.504	-5.457
	2900.00	20.924	200.601	181.938	526.807	54.124	-54.937	482.299	285.730	-5.147
	3000.00	20.963	201.311	182.572	528.901	56.218	-75.033	482.543	278.947	-4.857
	3100.00	21.010	201.999	183.188	531.000	58.317	-95.199	482.789	272.157	-4.586
	3200.00	21.064	202.667	183.786	533.103	60.420	-115.432	483.036	265.358	-4.332
	3300.00	21.127	203.316	184.368	535.213	62.530	-135.731	483.286	258.552	-4.093
	3400.00	21.197	203.948	184.935	537.329	64.646	-156.095	483.540	251.738	-3.867
	3500.00	21.277	204.564	185.487	539.452	66.769	-176.520	483.799	244.916	-3.655
	3600.00	21.365	205.164	186.025	541.584	68.901	-197.007	484.063	238.087	-3.455
	3700.00	21.462	205.751	186.550	543.726	71.043	-217.553	484.335	231.251	-3.265
	3800.00	21.569	206.325	187.063	545.877	73.194	-238.157	484.614	224.407	-3.085
	3900.00	21.684	206.886	187.564	548.040	75.357	-258.817	484.902	217.556	-2.914
	4000.00	21.809	207.437	188.054	550.214	77.531	-279.534	485.201	210.697	-2.751
	4100.00	21.941	207.977	188.534	552.402	79.719	-300.304	485.510	203.831	-2.597
	4200.00	22.083	208.508	189.003	554.603	81.920	-321.129	485.830	196.957	-2.450
	4300.00	22.232	209.029	189.462	556.819	84.136	-342.006	486.164	190.075	-2.309
	4400.00	22.388	209.542	189.913	559.049	86.366	-362.934	486.510	183.185	-2.175
	4500.00	22.552	210.047	190.355	561.296	88.613	-383.914	486.871	176.287	-2.046
	4600.00	22.722	210.544	190.788	563.560	90.877	-404.943	487.247	169.381	-1.923
	4700.00	22.899	211.035	191.214	565.841	93.158	-426.022	487.639	162.467	-1.806
	4800.00	23.081	211.519	191.632	568.140	95.457	-447.150	488.046	155.544	-1.693
	4900.00	23.269	211.997	192.043	570.457	97.774	-468.326	488.471	148.613	-1.584
	5000.00	23.461	212.469	192.446	572.794	100.111	-489.549	488.913	141.672	-1.480

References

Phase	H / S	C _p
GAS	Ja2	Ja2

NITROGEN (GAS)										N2[g]
Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
GAS	298.15	29.123	191.609	191.609	0.000	0.000	–57.128	0.000	0.000	0.000
	300.00	29.125	191.789	191.610	0.054	0.054	–57.483	0.000	0.000	0.000
	400.00	29.246	200.181	192.753	2.971	2.971	–77.101	0.000	0.000	0.000
	500.00	29.583	206.739	194.918	5.911	5.911	–97.459	0.000	0.000	0.000
	600.00	30.113	212.177	197.353	8.894	8.894	–118.412	0.000	0.000	0.000
	700.00	30.752	216.866	199.814	11.937	11.937	–139.869	0.000	0.000	0.000
	800.00	31.430	221.017	202.209	15.046	15.046	–161.767	0.000	0.000	0.000
	900.00	32.094	224.757	204.510	18.222	18.222	–184.059	0.000	0.000	0.000
	1000.00	32.696	228.171	206.708	21.463	21.463	–206.708	0.000	0.000	0.000
	1100.00	33.240	231.313	208.804	24.760	24.760	–229.684	0.000	0.000	0.000
	1200.00	33.723	234.226	210.803	28.109	28.109	–252.963	0.000	0.000	0.000
	1300.00	34.148	236.943	212.710	31.503	31.503	–276.523	0.000	0.000	0.000
	1400.00	34.519	239.487	214.533	34.936	34.936	–300.346	0.000	0.000	0.000
	1500.00	34.844	241.880	216.277	38.405	38.405	–324.416	0.000	0.000	0.000
	1600.00	35.128	244.138	217.948	41.904	41.904	–348.718	0.000	0.000	0.000
	1700.00	35.378	246.276	219.552	45.429	45.429	–373.239	0.000	0.000	0.000
	1800.00	35.598	248.304	221.094	48.978	48.978	–397.969	0.000	0.000	0.000
	1900.00	35.794	250.234	222.577	52.548	52.548	–422.897	0.000	0.000	0.000
	2000.00	35.969	252.075	224.006	56.137	56.137	–448.013	0.000	0.000	0.000
	2100.00	36.126	253.834	225.385	59.742	59.742	–473.309	0.000	0.000	0.000
	2200.00	36.267	255.517	226.717	63.361	63.361	–498.777	0.000	0.000	0.000
	2300.00	36.395	257.132	228.004	66.994	66.994	–524.410	0.000	0.000	0.000
	2400.00	36.511	258.684	229.251	70.640	70.640	–550.201	0.000	0.000	0.000
	2500.00	36.616	260.176	230.458	74.296	74.296	–576.145	0.000	0.000	0.000
	2600.00	36.713	261.615	231.629	77.963	77.963	–602.235	0.000	0.000	0.000
	2700.00	36.802	263.002	232.765	81.639	81.639	–628.466	0.000	0.000	0.000
	2800.00	36.884	264.342	233.869	85.323	85.323	–654.834	0.000	0.000	0.000
	2900.00	36.961	265.637	234.942	89.015	89.015	–681.333	0.000	0.000	0.000
	3000.00	37.031	266.892	235.987	92.715	92.715	–707.960	0.000	0.000	0.000
	3100.00	37.097	268.107	237.003	96.421	96.421	–734.710	0.000	0.000	0.000
	3200.00	37.159	269.286	237.994	100.134	100.134	–761.580	0.000	0.000	0.000
	3300.00	37.217	270.430	238.959	103.853	103.853	–788.566	0.000	0.000	0.000
	3400.00	37.272	271.542	239.901	107.578	107.578	–815.665	0.000	0.000	0.000
	3500.00	37.324	272.623	240.821	111.307	111.307	–842.873	0.000	0.000	0.000
	3600.00	37.373	273.675	241.719	115.042	115.042	–870.189	0.000	0.000	0.000
	3700.00	37.420	274.700	242.597	118.782	118.782	–897.608	0.000	0.000	0.000
	3800.00	37.464	275.698	243.455	122.526	122.526	–925.128	0.000	0.000	0.000
	3900.00	37.507	276.672	244.294	126.275	126.275	–952.746	0.000	0.000	0.000
	4000.00	37.548	277.622	245.115	130.028	130.028	–980.461	0.000	0.000	0.000
	4100.00	37.588	278.550	245.920	133.784	133.784	–1008.270	0.000	0.000	0.000
	4200.00	37.627	279.456	246.707	137.545	137.545	–1036.171	0.000	0.000	0.000
	4300.00	37.665	280.342	247.479	141.310	141.310	–1064.161	0.000	0.000	0.000
	4400.00	37.701	281.208	248.236	145.078	145.078	–1092.238	0.000	0.000	0.000
	4500.00	37.737	282.056	248.978	148.850	148.850	–1120.402	0.000	0.000	0.000
	4600.00	37.773	282.886	249.706	152.625	152.625	–1148.649	0.000	0.000	0.000
	4700.00	37.808	283.698	250.421	156.405	156.405	–1176.978	0.000	0.000	0.000
	4800.00	37.842	284.495	251.123	160.187	160.187	–1205.388	0.000	0.000	0.000
	4900.00	37.877	285.275	251.812	163.973	163.973	–1233.877	0.000	0.000	0.000
	5000.00	37.911	286.041	252.489	167.762	167.762	–1262.443	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Ja2	Ja2

Phase	T [K]	C_p	S	$-(G-H_{298})/T$	H	$H-H_{298}$	G	ΔH_f	ΔG_f	$\log K_f$
		[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{J}}{\text{K mol}}$]				[$\frac{\text{kJ}}{\text{mol}}$]			[-]
GAS	298.15	40.064	232.238	232.238	159.410	0.000	90.168	159.410	151.026	-26.459
	300.00	40.136	232.486	232.239	159.484	0.074	89.738	159.414	150.974	-26.287
	400.00	43.866	244.554	233.859	163.688	4.278	65.867	159.637	148.127	-19.343
	500.00	46.991	254.690	237.037	168.236	8.826	40.891	159.855	145.224	-15.171
	600.00	49.545	263.491	240.729	173.067	13.657	14.973	160.034	142.281	-12.387
	700.00	51.645	271.291	244.548	178.130	18.720	-11.774	160.170	139.310	-10.395
	800.00	53.369	278.304	248.336	183.384	23.974	-39.259	160.277	136.323	-8.901
	900.00	54.763	284.673	252.025	188.793	29.383	-67.413	160.362	133.323	-7.738
	1000.00	55.857	290.502	255.586	194.326	34.916	-96.176	160.425	130.316	-6.807
	1100.00	56.758	295.870	259.007	199.959	40.549	-125.498	160.465	127.302	-6.045
	1200.00	57.501	300.841	262.289	205.673	46.263	-155.337	160.485	124.287	-5.410
	1300.00	58.114	305.469	265.434	211.454	52.044	-185.655	160.487	121.270	-4.873
	1400.00	58.623	309.795	268.450	217.292	57.882	-216.420	160.472	118.254	-4.412
	1500.00	59.048	313.854	271.343	223.176	63.766	-247.605	160.441	115.239	-4.013
	1600.00	59.407	317.677	274.121	229.100	69.690	-279.183	160.398	112.227	-3.664
	1700.00	59.712	321.288	276.790	235.056	75.646	-311.133	160.341	109.218	-3.356
	1800.00	59.973	324.708	279.358	241.040	81.630	-343.434	160.273	106.213	-3.082
	1900.00	60.197	327.957	281.831	247.049	87.639	-376.069	160.193	103.211	-2.837
	2000.00	60.393	331.050	284.215	253.079	93.669	-409.021	160.100	100.215	-2.617

References

Phase	H / S	C_p
GAS	Ja1	Ja1

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	29.159	187.234	187.234	375.305	0.000	319.481	375.305	369.655	-64.762
	300.00	29.160	187.414	187.235	375.359	0.054	319.135	375.305	369.620	-64.357
	400.00	29.299	195.818	188.379	378.281	2.976	299.953	375.307	367.725	-48.020
	500.00	29.656	202.390	190.548	381.226	5.921	280.031	375.318	365.828	-38.218
	600.00	30.212	207.844	192.988	384.218	8.913	259.512	375.345	363.928	-31.683
	700.00	30.891	212.551	195.454	387.273	11.968	238.487	375.388	362.022	-27.014
	800.00	31.604	216.723	197.857	390.398	15.093	217.020	375.446	360.109	-23.513
	900.00	32.296	220.485	200.165	393.593	18.288	195.156	375.514	358.188	-20.789
	1000.00	32.944	223.922	202.372	396.855	21.550	172.933	375.589	356.259	-18.609
	1100.00	33.529	227.090	204.477	400.180	24.875	150.381	375.668	354.322	-16.825
	1200.00	34.051	230.030	206.485	403.559	28.254	127.523	375.749	352.378	-15.339
	1300.00	34.513	232.774	208.403	406.988	31.683	104.381	375.829	350.427	-14.080
	1400.00	34.924	235.347	210.237	410.460	35.155	80.974	375.908	348.470	-13.002
	1500.00	35.289	237.770	211.992	413.971	38.666	57.317	375.986	346.508	-12.066
	1600.00	35.614	240.058	213.675	417.517	42.212	33.424	376.061	344.540	-11.248
	1700.00	35.905	242.226	215.292	421.093	45.788	9.309	376.133	342.568	-10.526
	1800.00	36.167	244.286	216.846	424.697	49.392	-15.017	376.203	340.591	-9.884
	1900.00	36.402	246.247	218.342	428.325	53.020	-39.545	376.271	338.611	-9.309
	2000.00	36.615	248.120	219.784	431.976	56.671	-64.264	376.337	336.627	-8.792
	2100.00	36.809	249.911	221.177	435.648	60.343	-89.166	376.400	334.640	-8.324
	2200.00	36.987	251.628	222.522	439.338	64.033	-114.243	376.461	332.650	-7.898
	2300.00	37.151	253.276	223.824	443.045	67.740	-139.489	376.519	330.658	-7.509
	2400.00	37.303	254.860	225.084	446.767	71.462	-164.896	376.576	328.662	-7.153
	2500.00	37.447	256.386	226.306	450.505	75.200	-190.459	376.631	326.665	-6.825
	2600.00	37.579	257.857	227.491	454.256	78.951	-216.172	376.684	324.665	-6.523
	2700.00	37.703	259.278	228.642	458.020	82.715	-242.029	376.734	322.664	-6.242
	2800.00	37.821	260.651	229.761	461.797	86.492	-268.026	376.783	320.660	-5.982
	2900.00	37.932	261.980	230.849	465.584	90.279	-294.158	376.831	318.655	-5.740
	3000.00	38.038	263.268	231.908	469.383	94.078	-320.420	376.876	316.648	-5.513
	3100.00	38.139	264.517	232.940	473.192	97.887	-346.810	376.920	314.640	-5.302
	3200.00	38.235	265.729	233.946	477.011	101.706	-373.322	376.961	312.630	-5.103
	3300.00	38.328	266.907	234.927	480.839	105.534	-399.954	377.001	310.619	-4.917
	3400.00	38.417	268.053	235.885	484.676	109.371	-426.703	377.038	308.607	-4.741
	3500.00	38.503	269.167	236.820	488.522	113.217	-453.564	377.074	306.594	-4.576
	3600.00	38.586	270.253	237.733	492.377	117.072	-480.535	377.108	304.579	-4.419
	3700.00	38.667	271.312	238.627	496.239	120.934	-507.614	377.139	302.564	-4.271
	3800.00	38.745	272.344	239.500	500.110	124.805	-534.797	377.168	300.548	-4.131
	3900.00	38.822	273.351	240.356	503.988	128.683	-562.082	377.194	298.532	-3.998
	4000.00	38.896	274.335	241.193	507.874	132.569	-589.466	377.219	296.514	-3.872
	4100.00	38.969	275.296	242.013	511.767	136.462	-616.948	377.240	294.497	-3.752
	4200.00	39.040	276.236	242.817	515.668	140.363	-644.525	377.259	292.478	-3.637
	4300.00	39.110	277.156	243.605	519.575	144.270	-672.194	377.276	290.459	-3.528
	4400.00	39.178	278.056	244.377	523.490	148.185	-699.955	377.290	288.440	-3.424
	4500.00	39.246	278.937	245.136	527.411	152.106	-727.805	377.301	286.421	-3.325
	4600.00	39.312	279.800	245.880	531.339	156.034	-755.742	377.310	284.401	-3.229
	4700.00	39.377	280.646	246.611	535.273	159.968	-783.764	377.316	282.381	-3.138
	4800.00	39.441	281.476	247.328	539.214	163.909	-811.871	377.320	280.361	-3.051
	4900.00	39.505	282.290	248.034	543.162	167.857	-840.059	377.321	278.341	-2.967
	5000.00	39.567	283.089	248.727	547.115	171.810	-868.328	377.321	276.321	-2.887

References

Phase	H / S	C _p
GAS	Ja2	Ja2

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[———]	— J / (K mol)	—————]	[—————]		kJ / mol	—————]		[— —]
GAS	298.15	34.421	204.291	204.291	185.351	0.000	124.442	185.351	196.226	-34.378
	300.00	34.448	204.504	204.292	185.415	0.064	124.064	185.334	196.293	-34.178
	400.00	36.062	214.626	205.661	188.937	3.586	103.087	184.476	200.080	-26.128
	500.00	37.949	222.873	208.302	192.636	7.285	81.200	183.776	204.065	-21.319
	600.00	39.953	229.968	211.335	196.531	11.180	58.550	183.231	208.176	-18.123
	700.00	41.945	236.277	214.455	200.626	15.275	35.232	182.824	212.368	-15.847
	800.00	43.815	242.002	217.546	204.916	19.565	11.314	182.535	216.610	-14.143
	900.00	45.509	247.262	220.560	209.384	24.033	-13.153	182.336	220.882	-12.820
	1000.00	47.007	252.137	223.477	214.011	28.660	-38.126	182.209	225.172	-11.762
	1100.00	48.310	256.679	226.291	218.778	33.427	-63.569	182.135	229.472	-10.897
	1200.00	49.440	260.932	229.002	223.667	38.316	-89.452	182.101	233.777	-10.176
	1300.00	50.421	264.929	231.614	228.661	43.310	-115.747	182.096	238.084	-9.566
	1400.00	51.279	268.698	234.129	233.747	48.396	-142.430	182.112	242.390	-9.044
	1500.00	52.037	272.262	236.554	238.914	53.563	-169.480	182.145	246.695	-8.591
	1600.00	52.714	275.643	238.892	244.152	58.801	-196.876	182.192	250.996	-8.194
	1700.00	53.329	278.857	241.149	249.455	64.104	-224.603	182.250	255.295	-7.844
	1800.00	53.898	281.922	243.330	254.816	69.465	-252.643	182.319	259.590	-7.533
	1900.00	54.430	284.850	245.439	260.233	74.882	-280.983	182.399	263.881	-7.255
	2000.00	54.936	287.655	247.480	265.701	80.350	-309.609	182.490	268.167	-7.004
	2100.00	55.425	290.347	249.458	271.220	85.869	-338.510	182.595	272.448	-6.777
	2200.00	55.901	292.937	251.375	276.786	91.435	-367.675	182.713	276.724	-6.570
	2300.00	56.367	295.432	253.237	282.399	97.048	-397.094	182.846	280.994	-6.382
	2400.00	56.827	297.841	255.046	288.059	102.708	-426.758	182.996	285.259	-6.208
	2500.00	57.279	300.170	256.804	293.764	108.413	-456.660	183.164	289.516	-6.049
	2600.00	57.724	302.425	258.516	299.515	114.164	-486.790	183.350	293.767	-5.902
	2700.00	58.161	304.612	260.183	305.309	119.958	-517.142	183.556	298.010	-5.765
	2800.00	58.589	306.734	261.808	311.146	125.795	-547.710	183.781	302.244	-5.638
	2900.00	59.008	308.798	263.392	317.026	131.675	-578.487	184.027	306.471	-5.520
	3000.00	59.416	310.805	264.940	322.948	137.597	-609.468	184.291	310.689	-5.410
	3100.00	59.812	312.760	266.451	328.909	143.558	-640.646	184.575	314.897	-5.306
	3200.00	60.196	314.665	267.928	334.910	149.559	-672.018	184.878	319.097	-5.209
	3300.00	60.565	316.523	269.372	340.948	155.597	-703.578	185.198	323.286	-5.117
	3400.00	60.920	318.336	270.786	347.022	161.671	-735.321	185.536	327.465	-5.031
	3500.00	61.258	320.107	272.170	353.131	167.780	-767.244	185.889	331.635	-4.949
	3600.00	61.580	321.837	273.526	359.273	173.922	-799.341	186.257	335.794	-4.872
	3700.00	61.883	323.529	274.854	365.447	180.096	-831.610	186.637	339.942	-4.799
	3800.00	62.169	325.183	276.157	371.649	186.298	-864.046	187.028	344.081	-4.730
	3900.00	62.436	326.801	277.435	377.880	192.529	-896.645	187.430	348.208	-4.664
	4000.00	62.685	328.385	278.689	384.136	198.785	-929.405	187.839	352.326	-4.601
	4100.00	62.915	329.936	279.920	390.416	205.065	-962.321	188.254	356.433	-4.541
	4200.00	63.128	331.455	281.129	396.718	211.367	-995.391	188.674	360.529	-4.484
	4300.00	63.322	332.942	282.317	403.041	217.690	-1028.611	189.097	364.616	-4.429
	4400.00	63.499	334.400	283.484	409.382	224.031	-1061.978	189.522	368.693	-4.377
	4500.00	63.659	335.829	284.631	415.740	230.389	-1095.490	189.946	372.761	-4.327
	4600.00	63.803	337.230	285.760	422.114	236.763	-1129.143	190.369	376.818	-4.279
	4700.00	63.932	338.603	286.869	428.501	243.150	-1162.935	190.789	380.867	-4.233
	4800.00	64.046	339.951	287.961	434.900	249.549	-1196.863	191.205	384.907	-4.189
	4900.00	64.146	341.272	289.036	441.309	255.958	-1230.924	191.616	388.938	-4.146
	5000.00	64.233	342.569	290.094	447.728	262.377	-1265.117	192.020	392.961	-4.105

References

Phase	H / S	C _p
GAS	Ja2	Ja2

20.049

AMMONIA—D3 (GAS)

ND3[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _c [—]
GAS	298.15	38.224	203.931	203.931	-58.576	0.000	-119.378	-58.576	-25.984	4.552
	300.00	38.306	204.168	203.932	-58.505	0.071	-119.756	-58.613	-25.782	4.489
	400.00	42.924	215.817	205.489	-54.445	4.131	-140.772	-60.394	-14.557	1.901
	500.00	47.374	225.880	208.582	-49.927	8.649	-162.867	-61.740	-2.934	0.307
	600.00	51.473	234.885	212.228	-44.982	13.594	-185.913	-62.708	8.924	-0.777
	700.00	55.209	243.105	216.060	-39.644	18.932	-209.818	-63.363	20.918	-1.561
	800.00	58.586	250.701	219.921	-33.952	24.624	-234.513	-63.762	32.989	-2.154
	900.00	61.603	257.779	223.739	-27.939	30.637	-259.941	-63.954	45.096	-2.617
	1000.00	64.257	264.411	227.478	-21.643	36.933	-286.054	-63.980	57.215	-2.989
	1100.00	66.573	270.646	231.122	-15.099	43.477	-312.810	-63.873	69.331	-3.292
	1200.00	68.593	276.527	234.663	-8.338	50.238	-340.171	-63.660	81.431	-3.545
	1300.00	70.347	282.089	238.099	-1.389	57.187	-368.105	-63.362	93.511	-3.757
	1400.00	71.871	287.359	241.431	5.723	64.299	-396.579	-62.995	105.565	-3.939
	1500.00	73.199	292.364	244.661	12.978	71.554	-425.567	-62.573	117.590	-4.095
	1600.00	74.360	297.126	247.792	20.358	78.934	-455.044	-62.107	129.586	-4.231
	1700.00	75.379	301.665	250.829	27.846	86.422	-484.985	-61.604	141.552	-4.349
	1800.00	76.276	306.000	253.775	35.429	94.005	-515.370	-61.072	153.487	-4.454
	1900.00	77.067	310.145	256.633	43.097	101.673	-546.179	-60.517	165.392	-4.547
	2000.00	77.768	314.117	259.409	50.840	109.416	-577.393	-59.942	177.267	-4.630
	2100.00	78.389	317.926	262.105	58.648	117.224	-608.997	-59.354	189.113	-4.704
	2200.00	78.941	321.586	264.726	66.515	125.091	-640.974	-58.754	200.931	-4.771
	2300.00	79.431	325.106	267.275	74.434	133.010	-673.309	-58.147	212.721	-4.831
	2400.00	79.868	328.496	269.756	82.400	140.976	-705.991	-57.534	224.485	-4.886
	2500.00	80.255	331.764	272.171	90.406	148.982	-739.004	-56.920	236.223	-4.936
	2600.00	80.600	334.919	274.524	98.449	157.025	-772.340	-56.306	247.936	-4.981
	2700.00	80.907	337.967	276.818	106.525	165.101	-805.985	-55.694	259.626	-5.023
	2800.00	81.179	340.914	279.055	114.630	173.206	-839.930	-55.087	271.294	-5.061
	2900.00	81.420	343.767	281.237	122.760	181.336	-874.164	-54.486	282.940	-5.096
	3000.00	81.633	346.531	283.368	130.913	189.489	-908.680	-53.893	294.565	-5.129
	3100.00	81.812	349.211	285.449	139.085	197.661	-943.468	-53.310	306.170	-5.159
	3200.00	81.971	351.811	287.482	147.274	205.850	-978.519	-52.740	317.757	-5.187
	3300.00	82.109	354.335	289.470	155.479	214.055	-1013.827	-52.182	329.327	-5.213
	3400.00	82.228	356.788	291.414	163.696	222.272	-1049.384	-51.639	340.880	-5.237
	3500.00	82.326	359.173	293.316	171.924	230.500	-1085.183	-51.113	352.417	-5.260
	3600.00	82.405	361.494	295.178	180.160	238.736	-1121.217	-50.604	363.939	-5.281
	3700.00	82.465	363.752	297.001	188.404	246.980	-1157.479	-50.115	375.447	-5.300
	3800.00	82.509	365.952	298.787	196.653	255.229	-1193.965	-49.647	386.942	-5.319
	3900.00	82.537	368.096	300.536	204.905	263.481	-1230.668	-49.201	398.426	-5.336
	4000.00	82.550	370.185	302.252	213.160	271.736	-1267.582	-48.779	409.898	-5.353
	4100.00	82.548	372.224	303.933	221.415	279.991	-1304.703	-48.382	421.360	-5.368
	4200.00	82.534	374.213	305.583	229.669	288.245	-1342.026	-48.011	432.812	-5.383
	4300.00	82.506	376.155	307.202	237.921	296.497	-1379.544	-47.667	444.257	-5.397
	4400.00	82.467	378.051	308.791	246.170	304.746	-1417.255	-47.352	455.693	-5.410
	4500.00	82.415	379.904	310.350	254.414	312.990	-1455.153	-47.065	467.122	-5.422
	4600.00	82.351	381.714	311.882	262.652	321.228	-1493.234	-46.809	478.546	-5.434
	4700.00	82.274	383.485	313.387	270.884	329.460	-1531.495	-46.583	489.964	-5.445
	4800.00	82.185	385.216	314.865	279.107	337.683	-1569.930	-46.389	501.378	-5.456
	4900.00	82.082	386.910	316.318	287.320	345.896	-1608.537	-46.227	512.788	-5.466
	5000.00	81.966	388.567	317.747	295.523	354.099	-1647.311	-46.099	524.195	-5.476

References

Phase	H / S	C _p
GAS	Ja2	Ja2

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[—————]	J / (K mol)	—————	[—————]	—————	kJ / mol	—————	—————	[- -]
GAS	298.15	29.160	181.251	181.251	376.560	0.000	322.520	376.560	370.565	-64.921
	300.00	29.167	181.432	181.252	376.614	0.054	322.184	376.560	370.528	-64.515
	400.00	29.211	189.837	182.398	379.536	2.976	303.601	376.570	368.515	-48.123
	500.00	29.252	196.357	184.562	382.457	5.897	284.279	376.561	366.502	-38.288
	600.00	29.467	201.706	186.986	385.392	8.832	264.368	376.539	364.492	-31.732
	700.00	29.817	206.273	189.423	388.355	11.795	243.964	376.512	362.486	-27.049
	800.00	30.255	210.283	191.785	391.358	14.798	223.132	376.485	360.484	-23.537
	900.00	30.748	213.874	194.043	394.408	17.848	201.921	376.459	358.486	-20.806
	1000.00	31.270	217.141	196.192	397.509	20.949	180.368	376.438	356.490	-18.621
	1100.00	31.803	220.146	198.235	400.662	24.102	158.502	376.423	354.496	-16.834
	1200.00	32.331	222.936	200.178	403.869	27.309	136.346	376.416	352.503	-15.344
	1300.00	32.844	225.544	202.030	407.128	30.568	113.920	376.418	350.510	-14.084
	1400.00	33.331	227.996	203.798	410.437	33.877	91.242	376.428	348.517	-13.003
	1500.00	33.781	230.312	205.490	413.793	37.233	68.326	376.446	346.523	-12.067
	1600.00	34.187	232.505	207.110	417.192	40.632	45.184	376.469	344.527	-11.248
	1700.00	34.541	234.589	208.666	420.629	44.069	21.828	376.497	342.530	-10.525
	1800.00	34.892	236.573	210.161	424.101	47.541	-1.730	376.527	340.531	-9.882
	1900.00	35.222	238.468	211.602	427.606	51.046	-25.483	376.562	338.531	-9.307
	2000.00	35.531	240.283	212.991	431.144	54.584	-49.421	376.600	336.528	-8.789
	2100.00	35.823	242.024	214.332	434.712	58.152	-73.537	376.643	334.523	-8.321
	2200.00	36.100	243.696	215.629	438.308	61.748	-97.824	376.690	332.517	-7.895
	2300.00	36.366	245.307	216.885	441.932	65.372	-122.275	376.741	330.508	-7.506
	2400.00	36.621	246.860	218.101	445.581	69.021	-146.883	376.797	328.496	-7.150
	2500.00	36.868	248.360	219.282	449.256	72.696	-171.645	376.859	326.482	-6.821
	2600.00	37.107	249.811	220.428	452.955	76.395	-196.554	376.925	324.466	-6.519
	2700.00	37.340	251.216	221.543	456.677	80.117	-221.605	376.998	322.447	-6.238
	2800.00	37.567	252.578	222.627	460.422	83.862	-246.795	377.076	320.425	-5.978
	2900.00	37.789	253.900	223.683	464.190	87.630	-272.120	377.161	318.401	-5.735
	3000.00	38.006	255.185	224.711	467.980	91.420	-297.574	377.252	316.373	-5.509

References

Phase	H / S	C _p
GAS	Ja1	Ja1

16.023		AMIDOGEN (GAS)							NH2[g]	
Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _r
	[K]	[—————]	J / (K mol)	—————]	[—————]	kJ / mol	—————]	—————]	—————]	[-]
GAS	298.15	33.563	194.707	194.707	190.372	0.000	132.320	190.372	199.846	-35.012
	300.00	33.577	194.915	194.708	190.434	0.062	131.960	190.354	199.905	-34.807
	400.00	34.397	204.681	196.034	193.831	3.459	111.958	189.386	203.236	-26.540
	500.00	35.509	212.471	198.567	197.324	6.952	91.088	188.487	206.804	-21.605
	600.00	36.833	219.060	201.447	200.940	10.568	69.504	187.682	210.545	-18.330
	700.00	38.258	224.844	204.384	204.694	14.322	47.303	186.977	214.413	-16.000
	800.00	39.714	230.048	207.272	208.592	18.220	24.554	186.368	218.375	-14.258
	900.00	41.162	234.809	210.071	212.636	22.264	1.308	185.849	222.408	-12.908
	1000.00	42.577	239.220	212.768	216.824	26.452	-22.396	185.412	226.494	-11.831
	1100.00	43.945	243.342	215.362	221.150	30.778	-46.526	185.052	230.621	-10.951
	1200.00	45.202	247.221	217.857	225.608	35.236	-71.056	184.757	234.777	-10.220
	1300.00	46.355	250.885	220.258	230.187	39.815	-95.963	184.518	238.955	-9.601
	1400.00	47.413	254.359	222.571	234.876	44.504	-121.227	184.326	243.150	-9.072
	1500.00	48.386	257.664	224.801	239.667	49.295	-146.830	184.174	247.357	-8.614
	1600.00	49.286	260.816	226.954	244.551	54.179	-172.755	184.058	251.574	-8.213
	1700.00	50.125	263.829	229.035	249.522	59.150	-198.988	183.973	255.796	-7.860
	1800.00	50.911	266.717	231.049	254.574	64.202	-225.516	183.916	260.023	-7.546
	1900.00	51.652	269.490	233.000	259.703	69.331	-252.328	183.887	264.252	-7.265
	2000.00	52.356	272.157	234.891	264.903	74.531	-279.411	183.884	268.482	-7.012
	2100.00	53.028	274.728	236.728	270.173	79.801	-306.756	183.906	272.711	-6.783
	2200.00	53.672	277.210	238.512	275.508	85.136	-334.353	183.952	276.939	-6.575
	2300.00	54.292	279.609	240.247	280.906	90.534	-362.195	184.023	281.164	-6.385
	2400.00	54.892	281.933	241.935	286.366	95.994	-390.273	184.118	285.386	-6.211
	2500.00	55.474	284.185	243.581	291.884	101.512	-418.579	184.238	289.603	-6.051
	2600.00	56.040	286.372	245.185	297.460	107.088	-447.108	184.383	293.815	-5.903
	2700.00	56.593	288.498	246.750	303.092	112.720	-475.852	184.553	298.020	-5.766
	2800.00	57.134	290.566	248.278	308.778	118.406	-504.805	184.747	302.219	-5.638
	2900.00	57.664	292.580	249.771	314.518	124.146	-533.963	184.968	306.411	-5.519
	3000.00	58.186	294.543	251.231	320.311	129.939	-563.320	185.213	310.595	-5.408

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		[-]
GAS	298.15	35.650	192.778	192.779	-45.940	0.000	-103.417	-45.940	-16.409	2.875
	300.00	35.699	192.999	192.779	-45.874	0.066	-103.774	-45.981	-16.226	2.825
	400.00	38.741	203.673	194.214	-42.157	3.783	-123.626	-48.081	-5.984	0.781
	500.00	42.026	212.670	197.027	-38.118	7.822	-144.453	-49.897	4.756	-0.497
	600.00	45.259	220.620	200.308	-33.753	12.187	-166.125	-51.417	15.834	-1.379
	700.00	48.349	227.830	203.732	-29.071	16.869	-188.553	-52.663	27.145	-2.026
	800.00	51.260	234.479	207.165	-24.089	21.851	-211.672	-53.665	38.617	-2.521
	900.00	53.984	240.675	210.548	-18.826	27.114	-235.433	-54.451	50.202	-2.914
	1000.00	56.519	246.496	213.855	-13.299	32.641	-259.795	-55.050	61.864	-3.231
	1100.00	58.867	251.994	217.074	-7.528	38.412	-284.722	-55.486	73.577	-3.494
	1200.00	61.035	257.211	220.204	-1.532	44.408	-310.184	-55.781	85.325	-3.714
	1300.00	63.031	262.176	223.243	4.673	50.613	-336.156	-55.955	97.091	-3.901
	1400.00	64.861	266.915	226.194	11.069	57.009	-362.612	-56.022	108.867	-4.062
	1500.00	66.535	271.448	229.061	17.640	63.580	-389.532	-55.997	120.645	-4.201
	1600.00	68.060	275.792	231.847	24.371	70.311	-416.895	-55.893	132.418	-4.323
	1700.00	69.446	279.960	234.555	31.248	77.188	-444.684	-55.719	144.182	-4.430
	1800.00	70.702	283.966	237.190	38.256	84.196	-472.882	-55.486	155.935	-4.525
	1900.00	71.836	287.819	239.754	45.384	91.324	-501.472	-55.202	167.673	-4.610
	2000.00	72.858	291.530	242.250	52.619	98.559	-530.441	-54.876	179.395	-4.685
	2100.00	73.777	295.108	244.683	59.952	105.892	-559.774	-54.513	191.099	-4.753
	2200.00	74.602	298.559	247.054	67.372	113.312	-589.458	-54.122	202.786	-4.815
	2300.00	75.343	301.892	249.366	74.870	120.810	-619.482	-53.707	214.455	-4.870
	2400.00	76.008	305.113	251.622	82.438	128.378	-649.833	-53.274	226.105	-4.921
	2500.00	76.608	308.228	253.824	90.069	136.009	-680.501	-52.826	237.736	-4.967
	2600.00	77.150	311.243	255.975	97.758	143.698	-711.475	-52.368	249.350	-5.009
	2700.00	77.645	314.164	258.076	105.498	151.438	-742.746	-51.902	260.945	-5.048
	2800.00	78.102	316.997	260.130	113.285	159.225	-774.305	-51.430	272.524	-5.084
	2900.00	78.529	319.745	262.139	121.117	167.057	-806.143	-50.955	284.085	-5.117
	3000.00	78.938	322.414	264.104	128.990	174.930	-838.251	-50.477	295.630	-5.147

References

Phase	H / S	C _p
GAS	Co1	Ja1

32.045

HYDRAZINE (GAS)

N₂H₄[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	51.776	240.271	240.271	95.186	0.000	23.549	95.186	158.602	-27.786
	300.00	52.098	240.592	240.272	95.282	0.096	23.104	95.121	158.996	-27.684
	400.00	64.438	257.464	242.489	101.176	5.990	-1.809	92.286	180.746	-23.603
	500.00	71.732	272.680	247.035	108.009	12.823	-28.331	90.334	203.101	-21.218
	600.00	77.040	286.247	252.460	115.458	20.272	-56.290	88.942	225.793	-19.657
	700.00	81.410	298.460	258.174	123.386	28.200	-85.536	87.951	248.684	-18.557
	800.00	85.279	309.587	263.915	131.724	36.538	-115.946	87.274	271.696	-17.740
	900.00	88.859	319.840	269.567	140.432	45.246	-147.424	86.857	294.776	-17.108
	1000.00	92.258	329.380	275.076	149.489	54.303	-179.890	86.667	317.890	-16.605
	1100.00	95.539	338.327	280.424	158.880	63.694	-213.280	86.683	341.014	-16.193
	1200.00	98.739	346.778	285.604	168.594	73.408	-247.539	86.892	364.127	-15.850
	1300.00	101.883	354.806	290.621	178.626	83.440	-282.622	87.288	387.215	-15.558
	1400.00	104.986	362.470	295.482	188.970	93.784	-318.488	87.869	410.266	-15.307
	1500.00	108.059	369.818	300.194	199.622	104.436	-355.105	88.637	433.268	-15.088
	1600.00	111.109	376.890	304.768	210.581	115.395	-392.443	89.594	456.214	-14.894

References

Phase	H / S	C _p	Remarks
GAS	La1	La1	La1 MPT= 274.69, L= 12.66 kJ / BPT= 386.26, L= 41.80 kJ

53.491

AMMONIUM CHLORIDE

NH₄Cl

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-1	298.15	86.647	94.977	94.977	-314.553	0.000	-342.870	-314.553	-203.121	35.586
	300.00	86.944	95.514	94.978	-314.392	0.161	-343.047	-314.557	-202.429	35.246
	400.00	102.968	122.720	98.580	-304.897	9.656	-353.985	-314.066	-165.087	21.558
	457.85	112.239	137.241	102.555	-298.672	15.881	-361.508	-313.097	-143.601	16.383
			8.627		3.950					
SOL-2	457.85	85.791	145.868	102.555	-294.722	19.831	-361.508	-309.147	-143.601	16.383
	500.00	90.500	153.628	106.535	-291.007	23.546	-367.821	-309.276	-128.354	13.409
	600.00	101.671	171.116	115.857	-281.398	33.155	-384.067	-308.835	-92.193	8.026
	700.00	112.842	187.627	124.941	-270.672	43.881	-402.011	-307.345	-56.190	4.193
	800.00	124.014	203.424	133.770	-258.830	55.723	-421.569	-304.815	-20.471	1.337

References

Phase	H / S	C _p	Remarks
SOL-1	Ja1	Ja1	
SOL-2	Ja1	Ja1	Ja1 NDPT= 612., MPT= 793.2

NH4ClO4

AMMONIUM PERCHLORATE

117.489

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-1	298.15	128.103	184.180	184.180	-295.767	0.000	-350.680	-295.767	-88.601	15.523
	300.00	128.477	184.973	184.182	-295.530	0.237	-351.022	-295.803	-87.316	15.203
	400.00	148.714	224.705	189.463	-281.670	14.097	-371.552	-296.890	-17.608	2.299
	500.00	168.950	260.064	200.104	-265.787	29.980	-395.819	-296.225	52.172	-5.450

References

Phase	H / S	C _p	Remarks
SOL-1	Ja1	Ja1	Ja1 NDPT= 513.

NH4I

AMMONIUM IODIDE

144.943

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	81.688	112.968	112.968	-202.087	0.000	-235.768	-202.087	-111.966	19.616
	300.00	81.821	113.474	112.970	-201.936	0.151	-235.978	-202.120	-111.407	19.398
	400.00	88.997	137.995	116.265	-193.395	8.692	-248.593	-211.669	-80.645	10.531
	500.00	96.173	158.625	122.724	-184.136	17.951	-263.449	-233.822	-45.734	4.778
	600.00	103.350	176.794	130.249	-174.160	27.927	-280.236	-233.071	-8.176	0.712
	700.00	110.526	193.264	138.092	-163.466	38.621	-298.751	-231.656	29.204	-2.179
	800.00	117.703	208.491	145.951	-152.055	50.032	-318.848	-229.591	66.337	-4.331
	824.00	119.425	211.996	147.824	-149.209	52.878	-323.894	-229.000	75.206	-4.767

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 MPT= 824., L= 20.9 kJ

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	187.489	220.099	220.099	-1180.850	0.000	-1246.473	-1180.850	-901.609	157.958
	300.00	188.008	221.261	220.103	-1180.503	0.347	-1246.881	-1180.921	-899.876	156.682
	400.00	216.083	279.192	227.812	-1160.298	20.552	-1271.975	-1185.781	-805.642	105.206
	500.00	244.157	330.426	243.298	-1137.286	43.564	-1302.499	-1187.419	-710.388	74.214
	600.00	272.232	377.422	261.783	-1111.467	69.383	-1337.920	-1186.194	-615.046	53.545

References

Phase	H / S	C _p
SOL	Nb1	La1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
GAS	298.15	29.844	210.761	210.761	90.291	0.000	27.453	90.291	86.599	-15.172
	300.00	29.841	210.946	210.762	90.346	0.055	27.062	90.292	86.576	-15.074
	400.00	29.945	219.532	211.932	93.331	3.040	5.518	90.333	85.330	-11.143
	500.00	30.489	226.267	214.148	96.350	6.059	-16.783	90.352	84.077	-8.783
	600.00	31.238	231.890	216.649	99.435	9.144	-39.698	90.366	82.821	-7.210
	700.00	32.029	236.765	219.182	102.599	12.308	-63.136	90.381	81.562	-6.086
	800.00	32.769	241.091	221.655	105.839	15.548	-87.033	90.399	80.301	-5.243
	900.00	33.416	244.989	224.035	109.149	18.858	-111.340	90.418	79.038	-4.587
	1000.00	33.983	248.539	226.310	112.520	22.229	-136.019	90.437	77.772	-4.062
	1100.00	34.469	251.802	228.481	115.943	25.652	-161.039	90.457	76.505	-3.633
	1200.00	34.880	254.819	230.552	119.411	29.120	-186.372	90.477	75.235	-3.275
	1300.00	35.229	257.625	232.528	122.917	32.626	-211.995	90.494	73.965	-2.972
	1400.00	35.527	260.247	234.415	126.456	36.165	-237.890	90.509	72.693	-2.712
	1500.00	35.783	262.707	236.220	130.021	39.730	-264.039	90.520	71.420	-2.487
	1600.00	36.004	265.024	237.949	133.611	43.320	-290.427	90.526	70.146	-2.290
	1700.00	36.196	267.212	239.606	137.221	46.930	-317.040	90.528	68.872	-2.116
	1800.00	36.365	269.286	241.198	140.849	50.558	-343.866	90.523	67.598	-1.962
	1900.00	36.515	271.256	242.729	144.494	54.203	-370.894	90.513	66.325	-1.823
	2000.00	36.647	273.133	244.202	148.152	57.861	-398.114	90.496	65.052	-1.699
	2100.00	36.767	274.924	245.623	151.823	61.532	-425.517	90.471	63.781	-1.586
	2200.00	36.874	276.637	246.994	155.505	65.214	-453.096	90.439	62.511	-1.484
	2300.00	36.971	278.278	248.319	159.197	68.906	-480.842	90.400	61.242	-1.391
	2400.00	37.060	279.853	249.600	162.899	72.608	-508.750	90.352	59.975	-1.305
	2500.00	37.142	281.368	250.841	166.609	76.318	-536.811	90.297	58.711	-1.227
	2600.00	37.217	282.826	252.043	170.327	80.036	-565.021	90.234	57.448	-1.154
	2700.00	37.286	284.232	253.209	174.052	83.761	-593.375	90.162	56.189	-1.087
	2800.00	37.351	285.589	254.342	177.784	87.493	-621.866	90.083	54.932	-1.025
	2900.00	37.412	286.901	255.442	181.522	91.231	-650.491	89.996	53.678	-0.967
	3000.00	37.469	288.170	256.512	185.266	94.975	-679.245	89.902	52.427	-0.913

References

Phase	H / S	C _p
GAS	Ja1	Ja1

46.006

NITROGEN DIOXIDE (GAS)

NO₂[g]

Phase	T [K]	C _p [	S J / (K mol)	-(G-H298)/T]	H [	H-H298 kJ / mol	G kJ / mol	ΔH _f]	ΔG _f]	log K. [-]
GAS	298.15	36.662	240.020	240.020	33.095	0.000	-38.467	33.095	51.262	-8.981
	300.00	36.762	240.247	240.021	33.163	0.068	-38.911	33.082	51.374	-8.945
	400.00	40.896	251.439	241.519	37.063	3.968	-63.512	32.552	57.561	-7.517
	500.00	43.674	260.879	244.471	41.299	8.204	-89.141	32.259	63.851	-6.670
	600.00	45.843	269.040	247.901	45.778	12.683	-115.646	32.087	70.187	-6.110
	700.00	47.657	276.246	251.446	50.456	17.361	-142.917	31.988	76.545	-5.712
	800.00	49.222	282.715	254.957	55.301	22.206	-170.871	31.943	82.914	-5.414
	900.00	50.590	288.593	258.373	60.293	27.198	-199.440	31.941	89.286	-5.182
	1000.00	51.788	293.987	261.668	65.414	32.319	-228.573	31.980	95.656	-4.997
	1100.00	52.830	298.973	264.836	70.646	37.551	-258.224	32.054	102.020	-4.845
	1200.00	53.726	303.609	267.876	75.975	42.880	-288.356	32.160	108.377	-4.718
	1300.00	54.481	307.940	270.793	81.386	48.291	-318.936	32.291	114.723	-4.610
	1400.00	55.100	312.001	273.593	86.867	53.772	-349.935	32.441	121.058	-4.517
	1500.00	55.585	315.820	276.282	92.402	59.307	-381.328	32.601	127.383	-4.436
	1600.00	55.798	319.417	278.867	97.975	64.880	-413.092	32.758	133.696	-4.365
	1700.00	55.925	322.803	281.352	103.561	70.466	-445.204	32.889	140.001	-4.302
	1800.00	56.053	326.004	283.745	109.160	76.065	-477.646	32.998	146.298	-4.245
	1900.00	56.181	329.038	286.050	114.772	81.677	-510.399	33.085	152.590	-4.195
	2000.00	56.308	331.923	288.272	120.396	87.301	-543.449	33.153	158.878	-4.149
	2100.00	56.436	334.673	290.416	126.034	92.939	-576.779	33.202	165.163	-4.108
	2200.00	56.563	337.301	292.488	131.684	98.589	-610.379	33.234	171.446	-4.071
	2300.00	56.691	339.818	294.492	137.346	104.251	-644.236	33.249	177.728	-4.036
	2400.00	56.819	342.234	296.431	143.022	109.927	-678.339	33.249	184.009	-4.005
	2500.00	56.946	344.556	298.310	148.710	115.615	-712.680	33.235	190.291	-3.976
	2600.00	57.074	346.792	300.132	154.411	121.316	-747.248	33.206	196.574	-3.949
	2700.00	57.202	348.948	301.900	160.125	127.030	-782.035	33.165	202.858	-3.925
	2800.00	57.329	351.031	303.618	165.851	132.756	-817.035	33.111	209.144	-3.902
	2900.00	57.457	353.045	305.288	171.591	138.496	-852.239	33.047	215.432	-3.880
	3000.00	57.584	354.995	306.912	177.343	144.248	-887.642	32.972	221.723	-3.861

References

Phase	H / S	C _p
GAS	Ja1	Ja1

NO3[g]

NITROGEN TRIOXIDE (GAS)

62.005

Phase	T [K]	C _p [————— J / (K mol)]	S [————— J / (K mol)]	-(G-H298)/T [—————]	H [————— kJ / mol]	H-H298 [————— kJ / mol]	G [————— kJ / mol]	ΔH _f [————— kJ / mol]	ΔG _f [————— kJ / mol]	log K _f [-]
GAS	298.15	47.013	252.823	252.823	71.128	0.000	-4.251	71.128	116.060	-20.333
	300.00	47.137	253.114	252.824	71.215	0.087	-4.719	71.107	116.339	-20.256
	400.00	55.577	267.805	254.769	76.342	5.214	-30.780	70.319	131.555	-17.179
	500.00	62.649	281.011	258.720	82.274	11.146	-58.232	70.192	146.891	-15.346
	600.00	67.564	292.896	263.443	88.800	17.672	-86.938	70.487	162.208	-14.121
	700.00	70.972	303.582	268.427	95.736	24.608	-116.771	71.020	177.455	-13.242
	800.00	73.397	313.226	273.434	102.961	31.833	-147.619	71.685	192.616	-12.577
	900.00	75.172	321.979	278.350	110.394	39.266	-179.387	72.422	207.688	-12.054
	1000.00	76.507	329.971	283.118	117.981	46.853	-211.990	73.196	222.677	-11.631
	1100.00	77.535	337.313	287.716	125.685	54.557	-245.359	73.987	237.587	-11.282
	1200.00	78.343	344.096	292.135	133.481	62.353	-279.434	74.785	252.424	-10.988
	1300.00	78.990	350.393	296.377	141.349	70.221	-314.162	75.581	267.195	-10.736
	1400.00	79.516	356.267	300.447	149.275	78.147	-349.498	76.371	281.905	-10.518
	1500.00	79.950	361.768	304.354	157.249	86.121	-385.403	77.149	296.559	-10.327
	1600.00	80.313	366.940	308.106	165.263	94.135	-421.841	77.912	311.161	-10.158
	1700.00	80.620	371.818	311.711	173.310	102.182	-458.781	78.659	325.716	-10.008
	1800.00	80.883	376.434	315.180	181.385	110.257	-496.196	79.386	340.228	-9.873
	1900.00	81.109	380.813	318.520	189.485	118.357	-534.060	80.091	354.700	-9.751
	2000.00	81.306	384.979	321.740	197.606	126.478	-572.351	80.774	369.135	-9.641
	2100.00	81.478	388.950	324.846	205.745	134.617	-611.049	81.433	383.537	-9.540
	2200.00	81.631	392.744	327.847	213.901	142.773	-650.135	82.066	397.908	-9.448
	2300.00	81.766	396.376	330.748	222.071	150.943	-689.593	82.674	412.250	-9.362
	2400.00	81.888	399.858	333.556	230.254	159.126	-729.406	83.255	426.567	-9.284
	2500.00	81.997	403.203	336.275	238.448	167.320	-769.560	83.809	440.860	-9.211
	2600.00	82.096	406.421	338.912	246.653	175.525	-810.042	84.336	455.132	-9.144
	2700.00	82.186	409.521	341.470	254.867	183.739	-850.840	84.836	469.384	-9.081
	2800.00	82.268	412.511	343.954	263.090	191.962	-891.943	85.310	483.617	-9.022
	2900.00	82.344	415.400	346.368	271.320	200.192	-933.339	85.758	497.835	-8.967
	3000.00	82.414	418.193	348.716	279.558	208.430	-975.019	86.180	512.037	-8.915

References

Phase	H / S	C _p
GAS	Ja1	Ja1

44.013		DINITROGEN OXIDE (GAS)							N2O[g]	
Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K ]	[	J / (K mol)	]	[		kJ / mol			[-]
GAS	298.15	38.838	219.979	219.979	82.048	0.000	16.461	82.048	104.172	-18.250
	300.00	38.831	220.219	219.979	82.120	0.072	16.054	82.039	104.309	-18.162
	400.00	41.893	231.712	221.525	86.123	4.075	-6.562	81.639	111.801	-14.600
	500.00	45.881	241.503	224.563	90.518	8.470	-30.234	81.565	119.356	-12.469
	600.00	48.953	250.154	228.122	95.267	13.219	-54.825	81.751	126.900	-11.048
	700.00	51.208	257.878	231.831	100.281	18.233	-80.234	82.095	134.400	-10.029
	800.00	52.884	264.831	235.529	105.490	23.442	-106.375	82.526	141.843	-9.261
	900.00	54.162	271.137	239.140	110.845	28.797	-133.178	83.002	149.229	-8.661
	1000.00	55.164	276.897	242.632	116.313	34.265	-160.584	83.499	156.562	-8.178
	1100.00	55.970	282.194	245.991	121.871	39.823	-188.542	84.005	163.843	-7.780
	1200.00	56.635	287.093	249.215	127.502	45.454	-217.010	84.513	171.079	-7.447
	1300.00	57.194	291.649	252.306	133.195	51.147	-245.949	85.020	178.272	-7.163
	1400.00	57.675	295.906	255.270	138.939	56.891	-275.329	85.524	185.427	-6.918
	1500.00	58.095	299.900	258.113	144.728	62.680	-305.122	86.023	192.545	-6.705
	1600.00	58.468	303.661	260.844	150.556	68.508	-335.302	86.519	199.630	-6.517
	1700.00	58.803	307.216	263.468	156.420	74.372	-365.847	87.012	206.685	-6.351
	1800.00	59.109	310.586	265.993	162.316	80.268	-396.739	87.501	213.710	-6.202
	1900.00	59.390	313.789	268.425	168.241	86.193	-427.959	87.986	220.708	-6.068
	2000.00	59.652	316.842	270.770	174.193	92.145	-459.492	88.469	227.681	-5.946
	2100.00	59.898	319.759	273.034	180.171	98.123	-491.323	88.949	234.630	-5.836
	2200.00	60.130	322.551	275.221	186.172	104.124	-523.439	89.426	241.556	-5.735
	2300.00	60.351	325.228	277.338	192.196	110.148	-555.829	89.902	248.460	-5.643
	2400.00	60.562	327.801	279.387	198.242	116.194	-588.481	90.376	255.344	-5.557
	2500.00	60.765	330.278	281.374	204.309	122.261	-621.386	90.849	262.208	-5.479
	2600.00	60.961	332.665	283.301	210.395	128.347	-654.534	91.320	269.053	-5.405
	2700.00	61.151	334.969	285.172	216.501	134.453	-687.916	91.792	275.880	-5.337
	2800.00	61.336	337.197	286.990	222.625	140.577	-721.525	92.263	282.690	-5.274
	2900.00	61.517	339.352	288.759	228.768	146.720	-755.353	92.734	289.482	-5.214
	3000.00	61.693	341.441	290.480	234.928	152.880	-789.393	93.207	296.259	-5.158

References

Phase	H / S	C _p
GAS	Ja1	Ja1

N2O3[g]

DINITROGEN TRIOXIDE (GAS)

76.012

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
GAS	298.15	65.908	309.349	309.349	82.843	0.000	-9.389	82.843	139.486	-24.437
	300.00	65.920	309.757	309.350	82.965	0.122	-9.962	82.830	139.837	-24.348
	400.00	71.724	329.375	311.985	89.799	6.956	-41.951	82.289	158.935	-20.755
	500.00	78.581	346.143	317.177	97.326	14.483	-75.745	82.289	178.107	-18.607
	600.00	83.751	360.953	323.263	105.457	22.614	-111.115	82.697	197.237	-17.171
	700.00	87.494	374.159	329.608	114.029	31.186	-147.882	83.344	216.278	-16.139
	800.00	90.242	386.031	335.931	122.923	40.080	-185.902	84.123	235.217	-15.358
	900.00	92.310	396.785	342.105	132.055	49.212	-225.051	84.971	254.053	-14.745
	1000.00	93.908	406.597	348.071	141.369	58.526	-265.228	85.852	272.793	-14.249
	1100.00	95.174	415.609	353.807	150.826	67.983	-306.344	86.747	291.444	-13.840
	1200.00	96.200	423.936	359.308	160.396	77.553	-348.327	87.646	310.013	-13.495
	1300.00	97.049	431.670	364.580	170.060	87.217	-391.112	88.541	328.507	-13.200
	1400.00	97.764	438.889	369.633	179.801	96.958	-434.644	89.429	346.933	-12.944
	1500.00	98.378	445.656	374.478	189.609	106.766	-478.874	90.307	365.295	-12.721
	1600.00	98.911	452.022	379.128	199.474	116.631	-523.761	91.172	383.599	-12.523
	1700.00	99.382	458.033	383.594	209.389	126.546	-569.267	92.024	401.850	-12.347
	1800.00	99.803	463.726	387.889	219.349	136.506	-615.357	92.860	420.051	-12.190
	1900.00	100.183	469.132	392.024	229.349	146.506	-662.003	93.681	438.205	-12.047
	2000.00	100.531	474.280	396.009	239.385	156.542	-709.175	94.485	456.317	-11.918
	2100.00	100.850	479.193	399.854	249.454	166.611	-756.851	95.271	474.390	-11.800
	2200.00	101.147	483.891	403.568	259.554	176.711	-805.007	96.039	492.425	-11.692
	2300.00	101.425	488.394	407.159	269.683	186.840	-853.622	96.788	510.426	-11.592
	2400.00	101.687	492.716	410.634	279.838	196.995	-902.679	97.520	528.394	-11.500
	2500.00	101.935	496.872	414.001	290.020	207.177	-952.160	98.232	546.333	-11.415
	2600.00	102.171	500.874	417.266	300.225	217.382	-1002.049	98.927	564.243	-11.336
	2700.00	102.398	504.735	420.435	310.454	227.611	-1052.330	99.604	582.127	-11.262
	2800.00	102.615	508.463	423.512	320.704	237.861	-1102.991	100.263	599.986	-11.193
	2900.00	102.825	512.067	426.504	330.976	248.133	-1154.019	100.906	617.822	-11.128
	3000.00	103.028	515.557	429.415	341.269	258.426	-1205.401	101.534	635.635	-11.067

References

Phase	H / S	C _p
GAS	Ja1	Ja1

N2O4

DINITROGEN TETRAOXIDE

92.011

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
LIQ	298.15	142.532	209.229	209.229	-19.564	0.000	-81.946	-19.564	97.512	-17.084
	300.00	142.842	210.112	209.232	-19.300	0.264	-82.334	-19.463	98.238	-17.105
	301.00	143.009	210.588	209.236	-19.157	0.407	-82.544	-19.408	98.630	-17.116

References

Phase	H / S	C _p	Remarks
LIQ	Ja1	Ja1	Ja1,Ja2 MPT=261.95/ BPT=293.92(N2O4),L=28.91/ NDPT=301.(N2O4+NO2)

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
GAS	298.15	77.599	304.370	304.370	9.079	0.000	–81.669	9.079	97.788	–17.132
	300.00	77.662	304.850	304.371	9.223	0.144	–82.232	9.060	98.339	–17.122
	400.00	87.289	328.349	307.509	17.415	8.336	–113.925	8.393	128.222	–16.744
	500.00	97.495	348.971	313.778	26.675	17.596	–147.810	8.596	158.173	–16.524
	600.00	105.024	367.450	321.211	36.822	27.743	–183.648	9.440	188.017	–16.368
	700.00	110.415	384.067	329.024	47.609	38.530	–221.238	10.675	217.687	–16.244
	800.00	114.343	399.081	336.858	58.857	49.778	–260.408	12.140	247.162	–16.138
	900.00	117.281	412.726	344.542	70.445	61.366	–301.008	13.740	276.444	–16.044
	1000.00	119.536	425.204	351.993	82.290	73.211	–342.914	15.422	305.544	–15.960
	1100.00	121.312	436.684	359.177	94.336	85.257	–386.016	17.152	334.473	–15.883
	1200.00	122.743	447.303	366.084	106.541	97.462	–430.222	18.911	363.243	–15.812
	1300.00	123.918	457.175	372.716	118.876	109.797	–475.452	20.686	391.865	–15.745
	1400.00	124.901	466.396	379.082	131.319	122.240	–521.635	22.467	420.351	–15.683
	1500.00	125.738	475.042	385.194	143.852	134.773	–568.712	24.250	448.709	–15.625
	1600.00	126.461	483.181	391.066	156.462	147.383	–616.627	26.027	476.948	–15.571
	1700.00	127.094	490.867	396.713	169.141	160.062	–665.333	27.796	505.076	–15.519
	1800.00	127.655	498.148	402.148	181.879	172.800	–714.787	29.553	533.101	–15.470
	1900.00	128.158	505.063	407.384	194.670	185.591	–764.950	31.296	561.028	–15.424
	2000.00	128.614	511.649	412.434	207.509	198.430	–815.789	33.021	588.864	–15.380
	2100.00	129.030	517.934	417.309	220.391	211.312	–867.270	34.728	616.614	–15.337
	2200.00	129.415	523.945	422.021	233.314	224.235	–919.366	36.414	644.284	–15.297
	2300.00	129.771	529.706	426.578	246.273	237.194	–972.051	38.079	671.877	–15.259
	2400.00	130.105	535.236	430.991	259.267	250.188	–1025.300	39.722	699.398	–15.222
	2500.00	130.419	540.554	435.268	272.294	263.215	–1079.091	41.343	726.851	–15.187
	2600.00	130.717	545.675	439.417	285.351	276.272	–1133.404	42.941	754.240	–15.153
	2700.00	131.000	550.613	443.444	298.437	289.358	–1188.220	44.516	781.567	–15.120
	2800.00	131.271	555.383	447.357	311.550	302.471	–1243.521	46.070	808.837	–15.089
	2900.00	131.530	559.994	451.162	324.690	315.611	–1299.291	47.602	836.052	–15.059
	3000.00	131.781	564.457	454.865	337.856	328.777	–1355.515	49.114	863.214	–15.030

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	96.358	346.545	346.545	11.297	0.000	-92.025	11.297	118.014	-20.676
	300.00	96.600	347.141	346.546	11.475	0.178	-92.667	11.286	118.677	-20.663
	400.00	110.610	376.872	350.504	21.844	10.547	-128.905	11.309	154.504	-20.176
	500.00	121.329	402.781	358.425	33.475	22.178	-167.916	12.353	190.198	-19.870
	600.00	128.570	425.585	367.757	45.994	34.697	-209.357	13.989	225.621	-19.642
	700.00	133.514	445.799	377.490	59.113	47.816	-252.946	15.929	260.742	-19.457
	800.00	136.989	463.867	387.179	72.648	61.351	-298.446	18.013	295.574	-19.299
	900.00	139.506	480.155	396.619	86.479	75.182	-345.660	20.154	330.141	-19.161
	1000.00	141.378	494.955	405.724	100.528	89.231	-394.427	22.308	364.468	-19.038
	1100.00	142.803	508.500	414.461	114.740	103.443	-444.610	24.450	398.581	-18.927
	1200.00	143.908	520.974	422.824	129.078	117.781	-496.092	26.567	432.499	-18.826
	1300.00	144.781	532.529	430.824	143.514	132.217	-548.774	28.651	466.242	-18.734
	1400.00	145.479	543.285	438.477	158.028	146.731	-602.571	30.698	499.826	-18.649
	1500.00	146.044	553.342	445.803	172.605	161.308	-657.408	32.704	533.264	-18.570
	1600.00	146.507	562.783	452.822	187.233	175.936	-713.219	34.666	566.571	-18.497
	1700.00	146.889	571.676	459.555	201.904	190.607	-769.946	36.581	599.756	-18.428
	1800.00	147.207	580.082	466.019	216.609	205.312	-827.538	38.447	632.830	-18.364
	1900.00	147.473	588.048	472.234	231.344	220.047	-885.948	40.263	665.801	-18.304
	2000.00	147.697	595.618	478.215	246.102	234.805	-945.134	42.027	698.679	-18.248
	2100.00	147.886	602.829	483.979	260.882	249.585	-1005.059	43.738	731.469	-18.194
	2200.00	148.047	609.713	489.539	275.679	264.382	-1065.689	45.394	764.179	-18.144
	2300.00	148.183	616.297	494.908	290.490	279.193	-1126.992	46.996	796.815	-18.096
	2400.00	148.299	622.606	500.098	305.315	294.018	-1188.939	48.543	829.382	-18.051
	2500.00	148.398	628.662	505.121	320.150	308.853	-1251.504	50.035	861.887	-18.008
	2600.00	148.481	634.484	509.985	334.994	323.697	-1314.664	51.472	894.332	-17.967
	2700.00	148.552	640.089	514.700	349.845	338.548	-1378.394	52.855	926.723	-17.929
	2800.00	148.613	645.492	519.276	364.704	353.407	-1442.675	54.184	959.064	-17.892
	2900.00	148.663	650.708	523.718	379.568	368.271	-1507.486	55.461	991.359	-17.856
	3000.00	148.705	655.749	528.036	394.436	383.139	-1572.810	56.688	1023.610	-17.823

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [J / (K mol)	S J / (K mol)	-(G-H298)/T [J / (K mol)	H [kJ / mol	H-H298 kJ / mol	G kJ / mol	ΔH _f kJ / mol	ΔG _f kJ / mol	log K _r [-]
GAS	298.15	45.476	273.534	273.534	82.132	0.000	0.578	82.132	82.415	-14.439
	300.00	45.518	273.815	273.535	82.216	0.084	0.072	82.092	82.417	-14.350
	400.00	47.595	287.203	275.346	86.875	4.743	-28.006	66.565	85.714	-11.193
	500.00	49.292	298.012	278.832	91.722	9.590	-57.284	66.567	90.503	-9.455
	600.00	50.679	307.126	282.808	96.723	14.591	-87.553	66.638	95.284	-8.295
	700.00	51.827	315.027	286.859	101.850	19.718	-118.669	66.748	100.050	-7.466
	800.00	52.785	322.012	290.825	107.082	24.950	-150.528	66.884	104.799	-6.843
	900.00	53.585	328.277	294.644	112.402	30.270	-183.048	67.034	109.529	-6.357
	1000.00	54.252	333.958	298.296	117.795	35.663	-216.164	67.193	114.242	-5.967
	1100.00	54.805	339.156	301.777	123.248	41.116	-249.823	67.357	118.939	-5.648
	1200.00	55.261	343.945	305.094	128.752	46.620	-283.981	67.522	123.621	-5.381
	1300.00	55.634	348.383	308.256	134.298	52.166	-318.601	67.686	128.290	-5.155
	1400.00	55.938	352.518	311.271	139.877	57.745	-353.648	67.846	132.945	-4.960
	1500.00	56.187	356.386	314.151	145.484	63.352	-389.095	67.999	137.590	-4.791
	1600.00	56.392	360.019	316.906	151.113	68.981	-424.917	68.144	142.225	-4.643
	1700.00	56.566	363.443	319.544	156.761	74.629	-461.092	68.280	146.850	-4.512
	1800.00	56.721	366.681	322.073	162.426	80.294	-497.600	68.405	151.469	-4.396
	1900.00	56.869	369.751	324.502	168.105	85.973	-534.423	68.521	156.080	-4.291
	2000.00	57.021	372.672	326.838	173.799	91.667	-571.545	68.629	160.685	-4.197

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C_p	S	$-(G-H_{298})/T$	H	H-H ₂₉₈	G	ΔH_f	ΔG_f	log K_f
		[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
GAS	298.15	44.593	261.693	261.693	51.714	0.000	-26.310	51.714	66.098	-11.580
	300.00	44.643	261.969	261.694	51.797	0.083	-26.794	51.711	66.187	-11.524
	400.00	47.122	275.164	263.476	56.389	4.675	-53.676	51.626	71.029	-9.275
	500.00	49.106	285.900	266.920	61.204	9.490	-81.746	51.656	75.878	-7.927
	600.00	50.709	295.000	270.861	66.198	14.484	-110.802	51.760	80.714	-7.027
	700.00	52.033	302.919	274.887	71.337	19.623	-140.707	51.913	85.528	-6.382
	800.00	53.143	309.942	278.838	76.597	24.883	-171.356	52.097	90.318	-5.897
	900.00	54.082	316.257	282.651	81.960	30.246	-202.672	52.306	95.083	-5.518
	1000.00	54.879	321.998	286.303	87.409	35.695	-234.589	52.534	99.824	-5.214
	1100.00	55.556	327.261	289.790	92.931	41.217	-267.055	52.776	104.542	-4.964
	1200.00	56.132	332.120	293.118	98.517	46.803	-300.027	53.031	109.236	-4.755
	1300.00	56.623	336.633	296.294	104.155	52.441	-333.468	53.294	113.910	-4.577
	1400.00	57.044	340.845	299.327	109.839	58.125	-367.344	53.564	118.562	-4.424
	1500.00	57.409	344.793	302.228	115.562	63.848	-401.628	53.838	123.195	-4.290
	1600.00	57.730	348.509	305.005	121.319	69.605	-436.295	54.114	127.810	-4.173
	1700.00	58.020	352.017	307.669	127.107	75.393	-471.323	54.391	132.408	-4.068
	1800.00	58.291	355.341	310.226	132.923	81.209	-506.692	54.669	136.989	-3.975
	1900.00	58.556	358.500	312.684	138.765	87.051	-542.386	54.948	141.555	-3.892
	2000.00	58.825	361.511	315.051	144.634	92.920	-578.387	55.229	146.106	-3.816

References

Phase	H / S	C_p
GAS	La1,Ja1	Ja1

NITRYL CHLORIDE (GAS)										
NO2Cl[g]										
Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
GAS	298.15	52.807	272.069	272.069	12.134	0.000	-68.983	12.134	54.006	-9.462
	300.00	53.003	272.397	272.070	12.232	0.098	-69.487	12.119	54.266	-9.449
	400.00	60.547	288.795	274.255	17.950	5.816	-97.568	11.674	68.399	-8.932
	500.00	64.987	302.817	278.601	24.242	12.108	-127.166	11.652	82.589	-8.628
	600.00	68.120	314.956	283.671	30.905	18.771	-158.069	11.846	96.761	-8.424
	700.00	70.562	325.647	288.919	37.843	25.709	-190.109	12.170	110.889	-8.275
	800.00	72.570	335.204	294.118	45.003	32.869	-223.160	12.585	124.964	-8.159
	900.00	74.266	343.852	299.171	52.347	40.213	-257.120	13.073	138.983	-8.066
	1000.00	75.717	351.754	304.040	59.848	47.714	-291.906	13.621	152.944	-7.989
	1100.00	76.957	359.030	308.713	67.483	55.349	-327.450	14.222	166.848	-7.923
	1200.00	78.010	365.773	313.190	75.233	63.099	-363.694	14.867	180.695	-7.865
	1300.00	78.890	372.053	317.479	83.080	70.946	-400.589	15.546	194.486	-7.815
	1400.00	79.604	377.926	321.590	91.006	78.872	-438.091	16.252	208.225	-7.769
	1500.00	80.161	383.438	325.531	98.995	86.861	-476.162	16.972	221.912	-7.728
	1600.00	80.564	388.626	329.314	107.033	94.899	-514.768	17.694	235.551	-7.690
	1700.00	80.815	393.518	332.948	115.103	102.969	-553.878	18.408	249.145	-7.655
	1800.00	80.918	398.141	336.443	123.191	111.057	-593.463	19.101	262.698	-7.623
	1900.00	80.874	402.515	339.806	131.282	119.148	-633.498	19.758	276.213	-7.594
	2000.00	80.685	406.660	343.046	139.361	127.227	-673.958	20.368	289.695	-7.566
	2100.00	80.351	410.589	346.170	147.414	135.280	-714.822	20.917	303.147	-7.540
	2200.00	79.873	414.316	349.183	155.426	143.292	-756.069	21.391	316.575	-7.516
	2273.00	79.433	416.916	351.317	161.241	149.107	-786.410	21.683	326.365	-7.500

References

Phase	H / S	C _p
GAS	Ja1	Ja1

NOF[g]

NITROSYL FLUORIDE (GAS)

49.005

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	40.825	248.108	248.108	-65.689	0.000	-139.662	-65.689	-50.284	8.810
	300.00	40.941	248.361	248.108	-65.613	0.076	-140.122	-65.696	-50.189	8.739
	400.00	45.247	260.805	249.776	-61.278	4.411	-165.599	-65.912	-44.979	5.874
	500.00	47.567	271.172	253.048	-56.627	9.062	-192.213	-65.942	-39.740	4.152
	600.00	49.105	279.988	256.822	-51.789	13.900	-219.782	-65.912	-34.501	3.004
	700.00	50.274	287.649	260.690	-46.818	18.871	-248.172	-65.865	-29.270	2.184
	800.00	51.246	294.427	264.492	-41.741	23.948	-277.283	-65.814	-24.045	1.570
	900.00	52.104	300.513	268.162	-36.573	29.116	-307.035	-65.760	-18.828	1.093
	1000.00	52.891	306.044	271.678	-31.323	34.366	-337.367	-65.701	-13.616	0.711
	1100.00	53.631	311.120	275.036	-25.996	39.693	-368.228	-65.632	-8.411	0.399
	1200.00	54.340	315.817	278.241	-20.598	45.091	-399.578	-65.546	-3.212	0.140
	1300.00	55.026	320.194	281.302	-15.129	50.560	-431.381	-65.439	1.978	-0.079
	1400.00	55.697	324.296	284.228	-9.593	56.096	-463.608	-65.308	7.159	-0.267
	1500.00	56.355	328.162	287.029	-3.990	61.699	-496.232	-65.148	12.330	-0.429
	1600.00	57.004	331.819	289.715	1.678	67.367	-529.233	-64.958	17.489	-0.571

References

Phase	H / S	C _p
GAS	Ja1	La1

Na

SODIUM

22.990

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	28.154	51.455	51.455	0.000	0.000	-15.341	0.000	0.000	0.000
	300.00	28.204	51.629	51.456	0.052	0.052	-15.437	0.000	0.000	0.000
	370.98	31.583	57.897	52.099	2.151	2.151	-19.328	0.000	0.000	0.000
LIQ			7.017		2.603					
	370.98	31.827	64.915	52.099	4.754	4.754	-19.328	0.000	0.000	0.000
	400.00	31.510	67.300	53.116	5.673	5.673	-21.246	0.000	0.000	0.000
	500.00	30.553	74.224	56.675	8.775	8.775	-28.337	0.000	0.000	0.000
	600.00	29.806	79.725	60.074	11.791	11.791	-36.044	0.000	0.000	0.000
	700.00	29.270	84.277	63.216	14.743	14.743	-44.251	0.000	0.000	0.000
	800.00	28.947	88.162	66.097	17.652	17.652	-52.878	0.000	0.000	0.000
	900.00	28.838	91.563	68.741	20.539	20.539	-61.867	0.000	0.000	0.000
	1000.00	28.942	94.605	71.178	23.427	23.427	-71.178	0.000	0.000	0.000
	1100.00	29.260	97.377	73.436	26.335	26.335	-80.779	0.000	0.000	0.000
	1170.52	29.613	99.205	74.934	28.410	28.410	-87.712	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL	Ja2	Ja2	
LIQ	Ja2	Ja2	BPT=1170.525 GAS(Na),L=97.022 kJ / NBPT=1156. GAS(Na+Na2)

SODIUM (GAS)										Na[g]
Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	20.786	153.667	153.667	107.300	0.000	61.484	107.300	76.825	-13.460
	300.00	20.786	153.796	153.667	107.338	0.038	61.200	107.286	76.636	-13.344
	400.00	20.786	159.775	154.483	109.417	2.117	45.507	103.744	66.753	-8.717
	500.00	20.786	164.414	156.022	111.496	4.196	29.289	102.721	57.626	-6.020
	600.00	20.786	168.203	157.746	113.574	6.274	12.652	101.783	48.697	-4.239
	700.00	20.786	171.408	159.475	115.653	8.353	-4.332	100.910	39.919	-2.979
	800.00	20.786	174.183	161.144	117.731	10.431	-21.615	100.079	31.263	-2.041
	900.00	20.786	176.631	162.731	119.810	12.510	-39.158	99.271	22.709	-1.318
	1000.00	20.786	178.821	164.233	121.889	14.589	-56.933	98.462	14.246	-0.744
	1100.00	20.786	180.803	165.650	123.967	16.667	-74.915	97.632	5.864	-0.278
	1200.00	20.786	182.611	166.990	126.046	18.746	-93.087	0.000	0.000	0.000
	1300.00	20.786	184.275	168.256	128.125	20.825	-111.433	0.000	0.000	0.000
	1400.00	20.786	185.815	169.456	130.203	22.903	-129.938	0.000	0.000	0.000
	1500.00	20.786	187.250	170.595	132.282	24.982	-148.592	0.000	0.000	0.000
	1600.00	20.788	188.591	171.678	134.361	27.061	-167.385	0.000	0.000	0.000
	1700.00	20.789	189.851	172.711	136.439	29.139	-186.308	0.000	0.000	0.000
	1800.00	20.792	191.040	173.696	138.518	31.218	-205.353	0.000	0.000	0.000
	1900.00	20.797	192.164	174.639	140.598	33.298	-224.514	0.000	0.000	0.000
	2000.00	20.804	193.231	175.542	142.678	35.378	-243.784	0.000	0.000	0.000
	2100.00	20.816	194.246	176.409	144.759	37.459	-263.158	0.000	0.000	0.000
	2200.00	20.832	195.215	177.242	146.841	39.541	-282.632	0.000	0.000	0.000
	2300.00	20.855	196.141	178.043	148.926	41.626	-302.200	0.000	0.000	0.000
	2400.00	20.886	197.030	178.816	151.013	43.713	-321.859	0.000	0.000	0.000
	2500.00	20.925	197.883	179.562	153.103	45.803	-341.605	0.000	0.000	0.000
	2600.00	20.974	198.705	180.282	155.198	47.898	-361.434	0.000	0.000	0.000
	2700.00	21.033	199.497	180.979	157.298	49.998	-381.345	0.000	0.000	0.000
	2800.00	21.105	200.263	181.655	159.405	52.105	-401.333	0.000	0.000	0.000
	2900.00	21.190	201.006	182.309	161.520	54.220	-421.396	0.000	0.000	0.000
	3000.00	21.288	201.725	182.944	163.643	56.343	-441.533	0.000	0.000	0.000
	3100.00	21.402	202.425	183.562	165.778	58.478	-461.741	0.000	0.000	0.000
	3200.00	21.532	203.107	184.162	167.924	60.624	-482.018	0.000	0.000	0.000
	3300.00	21.680	203.772	184.746	170.085	62.785	-502.362	0.000	0.000	0.000
	3400.00	21.845	204.421	185.315	172.261	64.961	-522.771	0.000	0.000	0.000
	3500.00	22.030	205.057	185.870	174.454	67.154	-543.245	0.000	0.000	0.000
	3600.00	22.235	205.681	186.412	176.667	69.367	-563.782	0.000	0.000	0.000
	3700.00	22.461	206.293	186.941	178.902	71.602	-584.381	0.000	0.000	0.000
	3800.00	22.710	206.895	187.458	181.160	73.860	-605.041	0.000	0.000	0.000
	3900.00	22.981	207.488	187.964	183.445	76.145	-625.760	0.000	0.000	0.000
	4000.00	23.277	208.074	188.460	185.757	78.457	-646.538	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Ja2	Ja2

Na2[g]

SODIUM (GAS)

45.980

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	37.500	230.188	230.188	137.528	0.000	68.898	137.528	99.580	-17.446
	300.00	37.508	230.420	230.188	137.597	0.069	68.472	137.493	99.345	-17.297
	400.00	37.840	241.259	231.664	141.366	3.838	44.862	130.019	87.355	-11.407
	500.00	38.080	249.729	234.461	145.162	7.634	20.298	127.613	76.972	-8.041
	600.00	38.284	256.691	237.603	148.981	11.453	-5.034	125.399	67.055	-5.838
	700.00	38.471	262.606	240.762	152.819	15.291	-31.006	123.333	57.496	-4.290
	800.00	38.649	267.755	243.822	156.675	19.147	-57.529	121.371	48.226	-3.149
	900.00	38.821	272.317	246.739	160.548	23.020	-84.537	119.469	39.197	-2.275
	1000.00	38.991	276.416	249.505	164.439	26.911	-111.977	117.585	30.379	-1.587
	1100.00	39.158	280.140	252.124	168.346	30.818	-139.808	115.676	21.751	-1.033
	1200.00	39.324	283.554	254.603	172.270	34.742	-167.995	-79.822	18.180	-0.791
	1300.00	39.488	286.709	256.952	176.211	38.683	-196.510	-80.038	26.356	-1.059
	1400.00	39.653	289.641	259.184	180.168	42.640	-225.329	-80.238	34.547	-1.289
	1500.00	39.816	292.382	261.307	184.141	46.613	-254.432	-80.422	42.753	-1.489
	1600.00	39.979	294.957	263.330	188.131	50.603	-283.800	-80.590	50.970	-1.664
	1700.00	40.142	297.386	265.263	192.137	54.609	-313.419	-80.742	59.197	-1.819
	1800.00	40.304	299.685	267.112	196.159	58.631	-343.273	-80.877	67.433	-1.957
	1900.00	40.467	301.868	268.884	200.198	62.670	-373.352	-80.998	75.676	-2.080
	2000.00	40.629	303.948	270.586	204.253	66.725	-403.643	-81.103	83.925	-2.192

References

Phase	H / S	C _p
GAS	Ja1	Ja1

NaAlCl4

SODIUM TETRACHLOROALUMINATE

191.782

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	155.041	188.280	188.280	-1142.232	0.000	-1198.368	-1142.232	-1041.552	182.476
	300.00	155.216	189.240	188.283	-1141.945	0.287	-1198.717	-1142.168	-1040.927	181.242
	400.00	164.661	235.186	194.484	-1125.951	16.281	-1220.026	-1141.236	-1007.506	131.567
	424.00	166.928	244.846	197.063	-1121.972	20.260	-1225.787	-1140.332	-999.509	123.134

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 MPT= 424.

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
SOL	298.15	244.153	347.690	347.690	-1979.032	0.000	-2082.696	-1979.032	-1828.675	320.376
	300.00	244.357	349.201	347.695	-1978.580	0.452	-2083.341	-1978.970	-1827.742	318.238
	400.00	254.387	420.895	357.403	-1953.635	25.397	-2121.993	-1983.797	-1777.194	232.078
	500.00	264.010	478.701	376.061	-1927.712	51.320	-2167.062	-1980.532	-1725.903	180.304
	600.00	273.006	527.643	397.347	-1900.854	78.178	-2217.440	-1976.383	-1675.353	145.852
	700.00	281.165	570.350	419.075	-1873.139	105.893	-2272.384	-1971.421	-1625.563	121.301
	780.00	287.220	601.101	436.190	-1850.402	128.630	-2319.260	-1966.949	-1586.278	106.229

References

Phase	H / S	C _p	Remarks
SOL	Ja1,e	Ja1	Ja1 MPT= 780.

Na3AlF6

CRYOLITE

209.941

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
SOL-A	298.15	215.695	238.446	238.446	-3309.544	0.000	-3380.637	-3309.544	-3144.793	550.955
	300.00	216.237	239.782	238.450	-3309.144	0.400	-3381.079	-3309.520	-3143.770	547.379
	400.00	234.633	304.856	247.199	-3286.481	23.063	-3408.424	-3315.868	-3088.133	403.269
	500.00	247.626	358.609	264.258	-3262.368	47.176	-3441.673	-3313.790	-3031.418	316.690
	600.00	261.875	404.985	283.929	-3236.910	72.634	-3479.901	-3310.554	-2975.226	259.016
	700.00	278.277	446.557	304.238	-3209.921	99.623	-3522.511	-3305.938	-2919.683	217.869
	800.00	296.829	484.903	324.452	-3181.183	128.361	-3569.106	-3299.747	-2864.906	187.059
	838.00	304.415	498.852	332.045	-3169.760	139.784	-3587.798	-3296.952	-2844.316	177.293
SOL-B			9.835		8.242					
	838.00	282.002	508.687	332.045	-3161.518	148.026	-3587.798	-3288.710	-2844.316	177.293
	900.00	282.002	528.815	344.916	-3144.034	165.510	-3619.968	-3285.392	-2811.557	163.179
	1000.00	282.002	558.527	364.817	-3115.834	193.710	-3674.361	-3290.840	-2758.427	144.085
	1100.00	282.002	585.405	383.668	-3087.634	221.910	-3731.579	-3285.659	-2705.437	128.471
	1153.00	282.002	598.675	393.249	-3072.688	236.856	-3762.960	-3282.988	-2677.545	121.301
SOL-C			0.327		0.377					
	1153.00	355.640	599.002	393.249	-3072.311	237.233	-3762.960	-3282.611	-2677.545	121.301
	1200.00	355.640	613.211	401.588	-3055.596	253.948	-3791.449	-3567.113	-2645.675	115.163
	1285.00	355.640	637.550	416.400	-3025.366	284.178	-3844.619	-3554.433	-2580.845	104.910
LIQ			83.485		107.278					
	1285.00	396.225	721.035	416.400	-2918.088	391.456	-3844.619	-3447.155	-2580.845	104.910
	1300.00	396.225	725.634	419.942	-2912.145	397.399	-3855.469	-3444.313	-2570.749	103.294
	1400.00	396.225	754.997	442.839	-2872.523	437.021	-3929.518	-3425.389	-2504.262	93.435
	1500.00	396.225	782.334	464.571	-2832.900	476.644	-4006.401	-3406.508	-2439.126	84.938
	1600.00	396.225	807.905	485.239	-2793.278	516.266	-4085.926	-3387.666	-2375.249	77.544
	1700.00	396.225	831.926	504.933	-2753.655	555.889	-4167.930	-3368.860	-2312.549	71.056
	1800.00	396.225	854.574	523.734	-2714.033	595.511	-4252.266	-3350.087	-2250.955	65.321
	1900.00	396.225	875.997	541.716	-2674.410	635.134	-4338.804	-3331.347	-2190.403	60.218
	2000.00	396.225	896.320	558.942	-2634.788	674.756	-4427.429	-3312.637	-2130.837	55.652
	2100.00	396.225	915.652	575.472	-2595.165	714.379	-4518.035	-3293.957	-2072.207	51.543
	2200.00	396.225	934.085	591.357	-2555.543	754.001	-4610.529	-3275.308	-2014.466	47.829
	2300.00	396.225	951.698	606.644	-2515.920	793.624	-4704.825	-3256.691	-1957.572	44.458
	2400.00	396.225	968.561	621.375	-2476.298	833.246	-4800.844	-3238.107	-1901.487	41.385
	2500.00	396.225	984.735	635.588	-2436.675	872.869	-4898.514	-3219.557	-1846.175	38.574

References

Phase	H / S	C _p
SOL-A	Ja1	Ja1
SOL-B	Ja1	Ja1
SOL-C	Ja1	Ja1
LIQ	Ja1	Ja1

143.891

TRISODIUM ARSENIDE

Na3As

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
SOL	298.15	97.769	129.997	129.997	-205.016	0.000	-243.775	-205.016	-187.105	32.780
	300.00	97.864	130.602	129.999	-204.835	0.181	-244.016	-205.037	-186.994	32.558
	400.00	103.010	159.460	133.899	-194.791	10.225	-258.576	-214.364	-180.162	23.527
	500.00	108.156	182.999	141.433	-184.233	20.783	-275.733	-215.676	-171.445	17.911
	600.00	113.303	203.173	150.080	-173.160	31.856	-295.064	-216.274	-162.531	14.150
	700.00	118.449	221.026	158.963	-161.572	43.444	-316.290	-216.220	-153.569	11.459
	800.00	123.595	237.178	167.746	-149.470	55.546	-339.213	-215.577	-144.656	9.445
	900.00	128.742	252.033	176.297	-136.853	68.163	-363.683	-214.405	-135.856	7.885
	1000.00	133.888	265.863	184.569	-123.722	81.294	-389.585	-212.745	-127.213	6.645

References

Phase	H / S	C _p
SOL	Nb1	e

207.888

SODIUM ARSENATE

Na3AsO4

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
SOL	298.15	170.129	217.945	217.945	-1540.001	0.000	-1604.981	-1540.001	-1425.982	249.826
	300.00	170.366	218.998	217.948	-1539.686	0.315	-1605.385	-1539.997	-1425.275	248.162
	400.00	180.718	269.523	224.767	-1522.099	17.902	-1629.908	-1547.722	-1386.449	181.052
	500.00	188.569	310.719	237.961	-1503.622	36.379	-1658.982	-1547.234	-1346.170	140.633
	600.00	195.434	345.716	253.075	-1484.417	55.584	-1691.846	-1546.019	-1306.060	113.703
	700.00	201.835	376.327	268.541	-1464.551	75.450	-1727.979	-1544.196	-1266.203	94.485
	780.00	206.771	398.432	280.745	-1448.206	91.795	-1758.982	-1542.348	-1234.531	82.673

References

Phase	H / S	C _p
SOL	Nb1/G1	G1

NaBO2

SODIUM METABORATE

65.800

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	65.956	73.538	73.538	-975.709	0.000	-997.634	-975.709	-919.390	161.073
	300.00	66.134	73.947	73.539	-975.587	0.122	-997.771	-975.714	-919.041	160.019
	400.00	75.385	94.274	76.248	-968.499	7.210	-1006.208	-978.583	-899.906	117.516
	500.00	82.750	111.921	81.656	-960.576	15.133	-1016.537	-978.552	-880.231	91.957
	600.00	88.551	127.541	88.027	-952.001	23.708	-1028.525	-978.133	-860.601	74.922
	700.00	93.288	141.558	94.690	-942.901	32.808	-1041.992	-977.395	-841.066	62.761
	800.00	97.240	154.280	101.356	-933.369	42.340	-1056.793	-976.392	-821.656	53.649
	900.00	100.534	165.930	107.892	-923.475	52.234	-1072.812	-975.173	-802.386	46.569
	1000.00	103.208	176.666	114.240	-913.283	62.426	-1089.949	-973.792	-783.260	40.913
	1100.00	105.249	186.604	120.373	-902.855	72.854	-1108.119	-972.311	-764.278	36.293
	1200.00	106.619	195.825	126.281	-892.255	83.454	-1127.246	-1067.561	-742.991	32.342
	1240.00	106.965	199.327	128.581	-887.983	87.726	-1135.149	-1066.600	-732.188	30.843
			26.994		33.472					
LIQ	1240.00	146.440	226.321	128.581	-854.511	121.198	-1135.149	-1033.128	-732.188	30.843
	1300.00	146.440	233.241	133.253	-845.725	129.984	-1148.938	-1029.334	-717.717	28.838
	1400.00	146.440	244.093	140.787	-831.081	144.628	-1172.811	-1023.071	-693.982	25.893
	1500.00	146.440	254.196	148.015	-816.437	159.272	-1197.732	-1016.881	-670.692	23.356
	1600.00	146.440	263.647	154.950	-801.793	173.916	-1223.629	-1010.759	-647.813	21.149
	1700.00	146.440	272.525	161.608	-787.149	188.560	-1250.442	-1004.702	-625.315	19.214
	1747.40	146.440	276.552	164.671	-780.208	195.501	-1263.456	-1001.853	-614.776	18.377

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 BPT= 1747.40, L= 239.7 kJ

65.800

SODIUM METABORATE (GAS)

NaBO₂[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	58.239	287.132	287.132	-648.520	0.000	-734.128	-648.520	-655.884	114.908
	300.00	58.348	287.492	287.133	-648.412	0.108	-734.660	-648.540	-655.930	114.208
	400.00	63.495	305.020	289.488	-642.307	6.213	-764.315	-652.392	-658.013	85.928
	500.00	67.270	319.615	294.094	-635.759	12.761	-795.567	-653.735	-659.261	68.873
	600.00	70.124	332.144	299.416	-628.883	19.637	-828.170	-655.015	-660.245	57.479
	700.00	72.357	343.128	304.892	-621.755	26.765	-861.944	-656.249	-661.019	49.326
	800.00	74.135	352.910	310.294	-614.427	34.093	-896.755	-657.450	-661.618	43.199
	900.00	75.551	361.727	315.527	-606.940	41.580	-932.494	-658.638	-662.068	38.425
	1000.00	76.657	369.747	320.554	-599.327	49.193	-969.074	-659.836	-662.385	34.599
	1100.00	77.570	377.097	325.365	-591.614	56.906	-1006.421	-661.071	-662.580	31.463
	1200.00	78.312	383.880	329.962	-583.819	64.701	-1044.475	-759.124	-660.220	28.739
	1300.00	78.923	390.173	334.355	-575.956	72.564	-1083.181	-759.565	-651.960	26.196
	1400.00	79.429	396.041	338.554	-568.038	80.482	-1122.495	-760.028	-643.666	24.015
	1500.00	79.853	401.536	342.571	-560.073	88.447	-1162.377	-760.517	-635.337	22.124
	1600.00	80.211	406.701	346.420	-552.069	96.451	-1202.791	-761.035	-626.975	20.469
	1700.00	80.515	411.573	350.110	-544.033	104.487	-1243.707	-761.585	-618.580	19.007
	1800.00	80.776	416.183	353.654	-535.968	112.552	-1285.097	-762.170	-610.151	17.706
	1900.00	81.001	420.557	357.061	-527.879	120.641	-1326.936	-762.791	-601.689	16.542
	2000.00	81.196	424.716	360.341	-519.769	128.751	-1369.201	-763.452	-593.193	15.493
	2100.00	81.366	428.682	363.501	-511.640	136.880	-1411.873	-764.153	-584.663	14.543
	2200.00	81.515	432.471	366.551	-503.496	145.024	-1454.932	-764.896	-576.099	13.678
	2300.00	81.646	436.097	369.496	-495.338	153.182	-1498.362	-765.684	-567.499	12.888
	2400.00	81.762	439.575	372.344	-487.167	161.353	-1542.146	-816.776	-557.796	12.140
	2500.00	81.865	442.914	375.101	-478.986	169.534	-1586.272	-817.735	-546.986	11.429

References

Phase	H / S	C _p
GAS	Ja1	Ja1

NaB3O5

SODIUM TRIBORATE

135.420

Phase	T [K]	C _p [————— J / (K mol)]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
SOL	298.15	121.834	116.106	116.106	-2290.238	0.000	-2324.855	-2290.238	-2151.388	376.914
	300.00	122.186	116.861	116.108	-2290.012	0.226	-2325.070	-2290.263	-2150.526	374.440
	400.00	141.425	154.645	121.130	-2276.832	13.406	-2338.690	-2294.226	-2103.538	274.694
	500.00	159.973	188.218	131.246	-2261.752	28.486	-2355.861	-2295.087	-2055.749	214.763
	600.00	177.088	218.922	143.335	-2244.886	45.352	-2376.239	-2295.077	-2007.867	174.800
	700.00	192.513	247.401	156.191	-2226.391	63.847	-2399.572	-2294.136	-1960.060	146.261
	800.00	206.143	274.017	169.274	-2206.443	83.795	-2425.657	-2292.289	-1912.451	124.870
	900.00	217.927	298.996	182.314	-2185.224	105.014	-2454.321	-2289.617	-1865.124	108.249
	1000.00	227.839	322.487	195.169	-2162.920	127.318	-2485.407	-2286.243	-1818.133	94.970
	1039.00	231.193	331.268	200.113	-2153.968	136.270	-2498.156	-2284.767	-1799.904	90.488

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 DPT= 1039.

Na2B4O7

DISODIUM TETRABORATE

201.219

Phase	T [K]	C _p [————— J / (K mol)]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
SOL	298.15	186.712	189.489	189.489	-3276.741	0.000	-3333.237	-3276.741	-3081.526	539.871
	300.00	187.520	190.647	189.493	-3276.395	0.346	-3333.589	-3276.773	-3080.314	536.330
	400.00	213.723	248.756	197.239	-3256.134	20.607	-3355.637	-3283.613	-3014.182	393.612
	500.00	228.744	298.132	212.608	-3233.979	42.762	-3383.045	-3285.289	-2946.627	307.832
	600.00	241.348	340.976	230.509	-3210.461	66.280	-3415.046	-3286.785	-2878.750	250.617
	700.00	252.510	379.035	249.058	-3185.757	90.984	-3451.081	-3287.996	-2810.645	209.733
	800.00	262.397	413.412	267.488	-3160.002	116.739	-3490.731	-3288.870	-2742.388	179.060
	900.00	271.261	444.838	285.472	-3133.312	143.429	-3533.666	-3289.403	-2674.042	155.197
	1000.00	279.505	473.848	302.877	-3105.770	170.971	-3579.618	-3289.602	-2605.655	136.105
	1015.75	280.780	478.226	305.562	-3101.358	175.383	-3587.116	-3289.603	-2594.883	133.441
LIQ			79.911		81.170					
	1015.75	444.885	558.137	305.562	-3020.188	256.553	-3587.116	-3208.433	-2594.883	133.441
	1100.00	444.885	593.587	326.283	-2982.707	294.034	-3635.652	-3194.757	-2544.547	120.830
	1200.00	444.885	632.297	350.194	-2938.218	338.523	-3696.974	-3372.467	-2481.257	108.006
	1300.00	444.885	667.907	373.282	-2893.730	383.011	-3762.008	-3355.243	-2407.690	96.742
	1400.00	444.885	700.876	395.519	-2849.241	427.500	-3830.468	-3338.316	-2335.438	87.136
	1500.00	444.885	731.570	416.911	-2804.753	471.988	-3902.108	-3321.665	-2264.386	78.853
	1600.00	444.885	760.282	437.484	-2760.264	516.477	-3976.716	-3305.274	-2194.437	71.641
	1700.00	444.885	787.253	457.274	-2715.776	560.965	-4054.106	-3289.129	-2125.505	65.309
	1800.00	444.885	812.682	476.319	-2671.287	605.454	-4134.115	-3273.223	-2057.517	59.708
	1900.00	444.885	836.736	494.661	-2626.799	649.942	-4216.597	-3257.548	-1990.406	54.720
	2000.00	444.885	859.555	512.340	-2582.310	694.431	-4301.421	-3242.099	-1924.115	50.253

References

Phase	H / S	C _p
SOL	Ja1	Ja1
LIQ	Ja1	Ja1

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [—]
SOL	298.15	51.893	86.818	86.818	-361.414	0.000	-387.299	-361.414	-349.267	61.190
	300.00	51.918	87.139	86.819	-361.318	0.096	-387.460	-361.440	-349.191	60.800
	400.00	53.249	102.257	88.871	-356.060	5.354	-396.963	-379.044	-341.808	44.636
	500.00	54.580	114.282	92.791	-350.668	10.746	-407.809	-378.600	-332.546	34.741
	600.00	55.912	124.351	97.234	-345.144	16.270	-419.754	-377.951	-323.392	28.154
	700.00	57.243	133.070	101.744	-339.486	21.928	-432.635	-377.113	-314.363	23.458
	800.00	58.574	140.801	106.152	-333.695	27.719	-446.335	-376.105	-305.466	19.945
	900.00	59.906	147.777	110.395	-327.771	33.643	-460.770	-374.947	-296.704	17.220
	1000.00	61.237	154.157	114.457	-321.714	39.700	-475.871	-373.660	-288.078	15.048
	1020.00	61.503	155.372	115.247	-320.486	40.928	-478.966	-373.389	-286.369	14.665
LIQ			25.596		26.108					
	1020.00	62.342	180.969	115.247	-294.378	67.036	-478.966	-347.281	-286.369	14.665
	1100.00	62.342	185.676	120.200	-289.391	72.023	-493.634	-346.132	-281.636	13.374
	1200.00	62.342	191.100	125.886	-283.157	78.257	-512.477	-441.498	-273.394	11.901
	1300.00	62.342	196.090	131.097	-276.923	84.491	-531.840	-439.236	-259.477	10.426
	1400.00	62.342	200.710	135.906	-270.689	90.725	-551.683	-436.976	-245.734	9.168
	1500.00	62.342	205.011	140.372	-264.454	96.960	-571.971	-434.719	-232.153	8.084
	1600.00	62.342	209.035	144.539	-258.220	103.194	-592.676	-432.465	-218.722	7.141
	1700.00	62.342	212.814	148.445	-251.986	109.428	-613.770	-430.213	-205.432	6.312

References

Phase	H / S	C _p
SOL	Ja1	Ja1
LIQ	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	36.973	241.225	241.225	-143.930	0.000	-215.851	-143.930	-177.819	31.153
	300.00	36.975	241.454	241.226	-143.862	0.068	-216.298	-143.984	-178.029	30.998
	400.00	37.094	252.107	242.677	-140.158	3.772	-241.001	-163.143	-185.846	24.269
	500.00	37.212	260.397	245.423	-136.443	7.487	-266.641	-164.375	-191.378	19.993
	600.00	37.331	267.192	248.502	-132.716	11.214	-293.031	-165.523	-196.669	17.122
	700.00	37.450	272.956	251.594	-128.977	14.953	-320.046	-166.604	-201.774	15.057
	800.00	37.569	277.964	254.584	-125.226	18.704	-347.597	-167.635	-206.727	13.498
	900.00	37.688	282.396	257.433	-121.463	22.467	-375.619	-168.639	-211.553	12.278
	1000.00	37.807	286.373	260.131	-117.688	26.242	-404.061	-169.634	-216.268	11.297
	1100.00	37.925	289.982	262.683	-113.901	30.029	-432.882	-170.642	-220.883	10.489
	1200.00	38.044	293.287	265.098	-110.103	33.827	-462.047	-170.642	-222.964	9.705
	1300.00	38.163	296.337	267.385	-106.293	37.637	-491.531	-170.642	-222.964	8.806
	1400.00	38.282	299.169	269.555	-102.470	41.460	-521.308	-170.642	-222.964	8.035
	1500.00	38.401	301.815	271.619	-98.636	45.294	-551.358	-170.642	-222.964	7.366
	1600.00	38.520	304.297	273.584	-94.790	49.140	-581.665	-170.642	-222.964	6.781
	1700.00	38.638	306.636	275.460	-90.932	52.998	-612.213	-170.642	-222.964	6.264
	1800.00	38.757	308.847	277.254	-87.063	56.867	-642.988	-170.642	-222.964	5.805
	1900.00	38.876	310.946	278.973	-83.181	60.749	-673.978	-170.642	-222.964	5.393
	2000.00	38.995	312.943	280.622	-79.287	64.643	-705.174	-170.642	-222.964	5.023

References

Phase	H / S	C _p
GAS	Ja1	Ja1

205.788

DISODIUM DIBROMIDE (GAS)

 $\text{Na}_2\text{Br}_2[\text{g}]$

Phase	T [K]	C_p [—————]	S J / (K mol)	$-(G-H_{298})/T$ [—————]	H [—————]	H-H ₂₉₈ kJ / mol	G [—————]	ΔH_f [—————]	ΔG_f [—————]	log K_f [—]
GAS	298.15	80.124	348.988	348.988	-486.348	0.000	-590.399	-486.348	-514.335	90.109
	300.00	80.160	349.484	348.990	-486.200	0.148	-591.045	-486.444	-514.508	89.584
	400.00	81.435	372.744	352.152	-478.111	8.237	-627.209	-524.080	-516.899	67.500
	500.00	82.040	390.988	358.161	-469.934	16.414	-665.428	-525.798	-514.901	53.791
	600.00	82.374	405.978	364.918	-461.712	24.636	-705.299	-527.326	-512.575	44.624
	700.00	82.577	418.693	371.715	-453.464	32.884	-746.549	-528.717	-510.005	38.057
	800.00	82.710	429.729	378.292	-445.199	41.149	-788.982	-530.018	-507.242	33.120
	900.00	82.802	439.476	384.559	-436.923	49.425	-832.452	-531.275	-504.320	29.270
	1000.00	82.867	448.204	390.495	-428.639	57.709	-876.843	-532.531	-501.258	26.183
	1100.00	82.916	456.104	396.106	-420.350	65.998	-922.065	-533.832	-498.068	23.651
	1200.00	82.953	463.320	401.411	-412.057	74.291	-968.041	-535.740	-498.875	21.324
	1300.00	82.981	469.961	406.432	-403.760	82.588	-1014.710	-538.386	-499.984	18.884
	1400.00	83.004	476.112	411.192	-395.461	90.887	-1062.017	-542.035	-501.120	16.794
	1500.00	83.023	481.839	415.713	-387.159	99.189	-1109.918	-546.688	-502.281	14.984
	1600.00	83.037	487.198	420.015	-378.856	107.492	-1158.373	-552.345	-503.465	13.400
	1700.00	83.050	492.232	424.117	-370.552	115.796	-1207.347	-559.006	-504.670	12.004
	1800.00	83.060	496.980	428.034	-362.246	124.102	-1256.810	-566.672	-505.895	10.763
	1900.00	83.069	501.471	431.782	-353.940	132.408	-1306.734	-574.342	-507.139	9.653
	2000.00	83.076	505.732	435.374	-345.633	140.715	-1357.096	-582.018	-508.400	8.655

References

Phase	H / S	C_p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
[————— kJ / mol —————]										
SOL	298.15	68.632	118.491	118.491	-90.709	0.000	-126.037	-90.709	-80.420	14.089
	300.00	68.633	118.915	118.492	-90.582	0.127	-126.257	-90.677	-80.356	13.991
	400.00	68.711	138.671	121.185	-83.715	6.994	-139.183	-91.927	-76.937	10.047
	500.00	68.789	154.012	126.273	-76.840	13.869	-153.846	-90.954	-73.306	7.658
	600.00	68.867	166.560	131.973	-69.957	20.752	-169.893	-90.159	-69.854	6.081
	700.00	68.945	177.182	137.692	-63.066	27.643	-187.094	-89.520	-66.523	4.964
	800.00	69.023	186.393	143.217	-56.168	34.541	-205.283	-89.009	-63.273	4.131
	835.00	69.050	189.349	145.089	-53.752	36.957	-211.859	-88.857	-62.151	3.888
LIQ			10.522		8.786					
	835.00	79.496	199.872	145.089	-44.966	45.743	-211.859	-88.857	-62.151	3.888
	900.00	79.496	205.831	149.264	-39.798	50.911	-225.046	-79.148	-60.791	3.528
	1000.00	79.496	214.207	155.346	-31.849	58.860	-246.055	-77.825	-58.823	3.073
	1100.00	79.496	221.783	161.047	-23.899	66.810	-267.861	-76.622	-56.983	2.706
	1200.00	79.496	228.700	166.401	-15.950	74.759	-290.390	-172.303	-52.805	2.299
	1300.00	79.496	235.064	171.441	-8.000	82.709	-313.583	-170.421	-42.924	1.725
	1400.00	79.496	240.955	176.199	-0.050	90.659	-337.387	-168.596	-33.185	1.238
	1500.00	79.496	246.439	180.701	7.899	98.608	-361.760	-166.818	-23.575	0.821
	1600.00	79.496	251.570	184.971	15.849	106.558	-386.663	-165.081	-14.082	0.460
	1700.00	79.496	256.389	189.032	23.798	114.507	-412.064	-163.377	-4.697	0.144
	1800.00	79.496	260.933	192.902	31.748	122.457	-437.932	-161.701	4.588	-0.133
	1803.00	79.496	261.066	193.015	31.986	122.695	-438.715	-161.651	4.865	-0.141

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 NBPT= 1803. GAS (NaCN + Na2(CN)2)

49.008

SODIUM CYANIDE (GAS)

NaCN[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	50.178	243.367	243.367	94.266	0.000	21.706	94.266	67.323	-11.795
	300.00	50.223	243.678	243.368	94.359	0.093	21.256	94.264	67.156	-11.693
	400.00	51.953	258.387	245.362	99.476	5.210	-3.879	91.264	58.367	-7.622
	500.00	53.169	270.115	249.179	104.734	10.468	-30.323	90.620	50.216	-5.246
	600.00	54.238	279.905	253.506	110.105	15.839	-57.838	89.903	42.201	-3.674
	700.00	55.208	288.340	257.894	115.578	21.312	-86.260	89.125	34.312	-2.560
	800.00	56.080	295.770	262.173	121.144	26.878	-115.472	88.302	26.537	-1.733
	900.00	56.856	302.421	266.282	126.791	32.525	-145.388	87.441	18.867	-1.095
	1000.00	57.536	308.447	270.202	132.512	38.246	-175.936	86.535	11.296	-0.590
	1100.00	58.125	313.959	273.933	138.295	44.029	-207.060	85.573	3.818	-0.181
	1200.00	58.631	319.039	277.483	144.134	49.868	-238.713	-12.219	-1.128	0.049
	1300.00	59.061	323.750	280.863	150.019	55.753	-270.856	-12.401	-0.197	0.008
	1400.00	59.424	328.140	284.085	155.944	61.678	-303.453	-12.601	0.750	-0.028
	1500.00	59.730	332.251	287.160	161.902	67.636	-336.474	-12.815	1.711	-0.060
	1600.00	59.989	336.114	290.100	167.888	73.622	-369.895	-13.041	2.686	-0.088
	1700.00	60.211	339.758	292.915	173.899	79.633	-403.690	-13.277	3.676	-0.113
	1800.00	60.408	343.205	295.614	179.930	85.664	-437.840	-13.519	4.681	-0.136
	1900.00	60.589	346.476	298.206	185.980	91.714	-472.325	-13.768	5.699	-0.157
	2000.00	60.766	349.588	300.698	192.047	97.781	-507.130	-14.022	6.730	-0.176

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S — (G-H298)/T —	H [————— kJ / mol —————]	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]	
GAS	298.15	107.684	347.089	347.089	-8.786	0.000	-112.270	-8.786	-21.037	3.686
	300.00	107.791	347.755	347.091	-8.587	0.199	-112.913	-8.776	-21.113	3.676
	400.00	111.765	379.371	351.375	2.413	11.199	-149.336	-14.011	-24.844	3.244
	500.00	114.392	404.604	359.581	13.725	22.511	-188.577	-14.503	-27.498	2.873
	600.00	116.623	425.661	368.887	25.278	34.064	-230.118	-15.126	-30.041	2.615
	700.00	118.611	443.791	378.323	37.042	45.828	-273.612	-15.866	-32.469	2.423
	800.00	120.387	459.748	387.523	48.994	57.780	-318.804	-16.689	-34.786	2.271
	900.00	121.958	474.020	396.355	61.113	69.899	-365.505	-17.587	-36.995	2.147
	1000.00	123.332	486.942	404.778	73.379	82.165	-413.564	-18.574	-39.100	2.042
	1100.00	124.522	498.754	412.792	85.773	94.559	-462.857	-19.672	-41.100	1.952
	1200.00	125.542	509.634	420.414	98.277	107.063	-513.283	-214.429	-38.113	1.659
	1300.00	126.408	519.718	427.670	110.876	119.662	-564.757	-213.965	-23.439	0.942
	1400.00	127.139	529.113	434.584	123.554	132.340	-617.204	-213.536	-8.800	0.328
	1500.00	127.756	537.907	441.182	136.300	145.086	-670.560	-213.135	5.810	-0.202
	1600.00	128.277	546.169	447.489	149.102	157.888	-724.768	-212.757	20.394	-0.666
	1700.00	128.724	553.959	453.525	161.953	170.739	-779.778	-212.397	34.955	-1.074
	1800.00	129.118	561.328	459.311	174.846	183.632	-835.545	-212.053	49.495	-1.436
	1900.00	129.482	568.319	464.866	187.776	196.562	-892.031	-211.720	64.016	-1.760
	2000.00	129.835	574.970	470.206	200.742	209.528	-949.198	-211.397	78.520	-2.051

References

Phase	H / S	C _p
GAS	Ja1	Ja1

105.989

SODIUM CARBONATE

Na₂CO₃

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _i [-]
SOL-1	298.15	111.027	138.783	138.783	-1130.768	0.000	-1172.146	-1130.768	-1048.005	183.606
	300.00	111.248	139.471	138.785	-1130.562	0.206	-1172.404	-1130.764	-1047.492	182.385
	400.00	125.015	173.275	143.302	-1118.779	11.989	-1188.089	-1135.717	-1019.363	133.115
	500.00	142.346	202.967	152.312	-1105.441	25.327	-1206.924	-1134.501	-990.384	103.465
	600.00	163.214	230.711	163.084	-1090.192	40.576	-1228.618	-1131.604	-961.802	83.732
	700.00	187.591	257.656	174.674	-1072.681	58.087	-1253.040	-1126.657	-933.861	69.686
	723.00	193.691	263.818	177.412	-1068.297	62.471	-1259.037	-1125.189	-927.550	67.013
			0.954		0.690					
SOL-2	723.00	143.405	264.772	177.412	-1067.607	63.161	-1259.037	-1124.499	-927.550	67.013
	800.00	153.344	279.780	186.547	-1056.182	74.586	-1280.006	-1122.905	-906.651	59.198
	900.00	166.251	298.586	197.957	-1040.202	90.566	-1308.930	-1119.841	-879.792	51.062
	1000.00	179.159	316.771	208.934	-1022.931	107.837	-1339.702	-1115.657	-853.333	44.574
	1100.00	192.067	334.452	219.545	-1004.370	126.398	-1372.267	-1110.366	-827.348	39.287
	1123.00	195.035	338.457	221.939	-999.919	130.849	-1380.006	-1108.994	-821.444	38.208
			26.416		29.665					
LIQ	1123.00	189.535	364.873	221.939	-970.254	160.514	-1380.006	-1079.329	-821.444	38.208
	1200.00	189.535	377.442	231.518	-955.659	175.109	-1408.590	-1268.646	-799.022	34.781
	1300.00	189.535	392.613	243.335	-936.706	194.062	-1447.103	-1261.516	-760.177	30.544
	1400.00	189.535	406.659	254.505	-917.752	213.016	-1487.075	-1254.468	-721.877	26.934
	1500.00	189.535	419.736	265.090	-898.799	231.969	-1528.402	-1247.493	-684.079	23.822
	1600.00	189.535	431.968	275.141	-879.845	250.923	-1570.994	-1240.582	-646.744	21.114
	1700.00	189.535	443.459	284.708	-860.892	269.876	-1614.771	-1233.728	-609.839	18.738
	1800.00	189.535	454.292	293.831	-841.938	288.830	-1659.664	-1226.927	-573.336	16.638
	1900.00	189.535	464.540	302.549	-822.985	307.783	-1705.610	-1220.176	-537.210	14.769
	2000.00	189.535	474.262	310.893	-804.031	326.737	-1752.554	-1213.473	-501.438	13.096

References

Phase	H / S	C _p
SOL-1	Ja1	Ja1
SOL-2	Ja1	Ja1
LIQ	Ja1	Ja1

NaCl

SODIUM CHLORIDE

58.442

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	50.503	72.132	72.132	-411.120	0.000	-432.626	-411.120	-384.024	67.279
	300.00	50.544	72.445	72.133	-411.027	0.093	-432.760	-411.110	-383.856	66.835
	400.00	52.374	87.250	74.139	-405.876	5.244	-440.776	-413.314	-374.636	48.922
	500.00	53.907	99.103	77.985	-400.561	10.559	-450.113	-412.886	-365.011	38.132
	600.00	55.470	109.067	82.356	-395.093	16.027	-460.534	-412.252	-355.493	30.948
	700.00	57.234	117.747	86.805	-389.460	21.660	-471.883	-411.410	-346.096	25.826
	800.00	59.321	125.522	91.167	-383.636	27.484	-484.053	-410.347	-336.836	21.993
	900.00	61.836	132.649	95.385	-377.582	33.538	-496.966	-409.043	-327.722	19.021
	1000.00	64.877	139.317	99.448	-371.251	39.869	-510.568	-407.470	-318.768	16.651
	1073.95	67.518	144.036	102.356	-366.358	44.762	-521.046	-406.112	-312.257	15.188
LIQ			26.219		28.158					
	1073.95	69.676	170.255	102.356	-338.200	72.920	-521.046	-377.954	-312.257	15.188
	1100.00	69.480	171.923	103.984	-336.387	74.733	-525.503	-377.392	-310.670	14.752
	1200.00	68.726	177.936	109.900	-329.477	81.643	-543.001	-472.074	-302.256	13.157
	1300.00	67.973	183.407	115.348	-322.642	88.478	-561.072	-469.205	-288.222	11.581
	1400.00	67.220	188.417	120.390	-315.883	95.237	-579.667	-466.414	-274.405	10.238
	1500.00	66.467	193.029	125.081	-309.198	101.922	-598.742	-463.703	-260.785	9.081
	1600.00	66.944	197.350	129.465	-302.504	108.616	-618.263	-460.985	-247.346	8.075
	1700.00	66.944	201.408	133.578	-295.809	115.311	-638.203	-458.271	-234.077	7.192
	1800.00	66.944	205.235	137.454	-289.115	122.005	-658.537	-455.561	-220.967	6.412
	1900.00	66.944	208.854	141.118	-282.421	128.699	-679.243	-452.855	-208.008	5.719
	2000.00	66.944	212.288	144.591	-275.726	135.394	-700.302	-450.153	-195.191	5.098

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	MPT= 1073.8
LIQ	Ja1	Ja1	

58.442

SODIUM CHLORIDE (GAS)

NaCl[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _r [—]
GAS	298.15	35.770	229.811	229.811	-181.418	0.000	-249.936	-181.418	-201.334	35.273
	300.00	35.793	230.032	229.812	-181.352	0.066	-250.362	-181.435	-201.457	35.077
	400.00	36.637	240.461	231.228	-177.725	3.693	-273.909	-185.163	-207.769	27.132
	500.00	37.068	248.687	233.926	-174.038	7.380	-298.381	-186.363	-213.280	22.281
	600.00	37.335	255.470	236.968	-170.317	11.101	-323.599	-187.476	-218.558	19.027
	700.00	37.526	261.241	240.034	-166.573	14.845	-349.441	-188.522	-223.654	16.689
	800.00	37.675	266.262	243.005	-162.813	18.605	-375.822	-189.524	-228.604	14.926
	900.00	37.801	270.706	245.841	-159.039	22.379	-402.675	-190.500	-233.431	13.548
	1000.00	37.912	274.695	248.530	-155.253	26.165	-429.948	-191.472	-238.149	12.440
	1100.00	38.013	278.313	251.076	-151.457	29.961	-457.601	-192.461	-242.769	11.528
	1200.00	38.107	281.625	253.485	-147.651	33.767	-485.601	-190.248	-244.856	10.658
	1300.00	38.197	284.679	255.769	-143.835	37.583	-513.918	-190.398	-241.068	9.686
	1400.00	38.284	287.513	257.936	-140.011	41.407	-542.529	-190.543	-237.268	8.853
	1500.00	38.368	290.157	259.997	-136.179	45.239	-571.414	-190.683	-233.457	8.130
	1600.00	38.450	292.636	261.961	-132.338	49.080	-600.555	-190.819	-229.638	7.497
	1700.00	38.531	294.969	263.834	-128.489	52.929	-629.936	-190.950	-225.810	6.938
	1800.00	38.610	297.174	265.626	-124.632	56.786	-659.544	-191.078	-221.974	6.442
	1900.00	38.689	299.263	267.342	-120.767	60.651	-689.367	-191.201	-218.132	5.997
	2000.00	38.767	301.250	268.988	-116.894	64.524	-719.394	-191.321	-214.283	5.597

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Na2Cl2[g]

DISODIUM DICHLORIDE (GAS)

116.885

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	78.789	325.625	325.625	-566.095	0.000	-663.180	-566.095	-565.975	99.156
	300.00	78.839	326.112	325.626	-565.949	0.146	-663.783	-566.116	-565.974	98.545
	400.00	80.661	349.078	328.745	-557.962	8.133	-697.593	-572.839	-565.313	73.822
	500.00	81.534	367.181	334.686	-549.847	16.248	-733.438	-574.498	-563.236	58.841
	600.00	82.018	382.093	341.381	-541.668	24.427	-770.924	-575.986	-560.841	48.826
	700.00	82.314	394.760	348.125	-533.450	32.645	-809.782	-577.349	-558.208	41.654
	800.00	82.508	405.765	354.657	-525.208	40.887	-849.820	-578.630	-555.385	36.263
	900.00	82.642	415.492	360.886	-516.950	49.145	-890.893	-579.873	-552.405	32.061
	1000.00	82.738	424.204	366.790	-508.681	57.414	-932.885	-581.119	-549.286	28.692
	1100.00	82.809	432.093	372.374	-500.404	65.691	-975.706	-582.412	-546.041	25.929
	1200.00	82.863	439.301	377.655	-492.120	73.975	-1019.281	-777.314	-537.793	23.410
	1300.00	82.905	445.935	382.656	-483.831	82.264	-1063.547	-776.956	-517.847	20.807
	1400.00	82.938	452.080	387.398	-475.539	90.556	-1108.452	-776.602	-497.929	18.578
	1500.00	82.965	457.804	391.903	-467.244	98.851	-1153.949	-776.253	-478.036	16.647
	1600.00	82.987	463.159	396.191	-458.946	107.149	-1200.000	-775.909	-458.166	14.958
	1700.00	83.004	468.190	400.280	-450.647	115.448	-1246.570	-775.570	-438.318	13.468
	1800.00	83.019	472.935	404.185	-442.346	123.749	-1293.629	-775.237	-418.489	12.144
	1900.00	83.032	477.424	407.923	-434.043	132.052	-1341.149	-774.911	-398.678	10.960
	2000.00	83.042	481.683	411.505	-425.739	140.356	-1389.106	-774.592	-378.885	9.895

References

Phase	H / S	C _p
GAS	Ja1	Ja1

NaClO4

SODIUM PERCHLORATE

122.440

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-A	298.15	111.324	142.256	142.256	-382.752	0.000	-425.166	-382.752	-254.234	44.541
	300.00	111.956	142.947	142.258	-382.545	0.207	-425.429	-382.738	-253.437	44.127
	400.00	136.064	178.841	146.989	-370.011	12.741	-441.547	-383.500	-210.362	27.470
	500.00	150.129	210.822	156.624	-355.653	27.099	-461.064	-380.147	-167.439	17.492
	581.00	158.503	233.998	165.821	-343.141	39.611	-479.094	-376.658	-133.241	11.979
SOL-B			24.053		13.975					
	581.00	158.503	258.051	165.821	-329.166	53.586	-479.094	-362.683	-133.241	11.979
	600.00	160.241	263.180	168.823	-326.138	56.614	-484.046	-361.785	-125.752	10.948
	700.00	168.487	288.517	184.144	-309.691	73.061	-511.653	-356.637	-86.811	6.478
	755.00	172.565	301.415	192.221	-300.311	82.441	-527.879	-353.531	-65.728	4.547

References

Phase	H / S	C _p	Remarks
SOL-A	Ja1	Ja1	
SOL-B	Ja1	Ja1	MPT= 755.

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-A	298.15	142.131	176.611	176.611	-1342.198	0.000	-1394.855	-1342.198	-1234.795	216.331
	300.00	142.390	177.491	176.614	-1341.935	0.263	-1395.182	-1342.191	-1234.128	214.881
	400.00	156.390	220.371	182.366	-1326.996	15.202	-1415.144	-1346.866	-1197.774	156.413
	500.00	170.389	256.772	193.690	-1310.657	31.541	-1439.043	-1345.450	-1160.639	121.251
	600.00	184.389	289.075	206.942	-1292.918	49.280	-1466.363	-1342.813	-1123.905	97.845
	696.00	197.829	317.415	220.251	-1274.572	67.626	-1495.493	-1339.139	-1089.144	81.740
			19.838		13.807					
SOL-B	696.00	185.860	337.253	220.251	-1260.765	81.433	-1495.493	-1325.332	-1089.144	81.740
	700.00	186.067	338.318	220.922	-1260.021	82.177	-1496.844	-1325.204	-1087.787	81.172
	800.00	191.226	363.501	237.199	-1241.156	101.042	-1531.957	-1321.807	-1054.098	68.826
	900.00	196.384	386.322	252.519	-1221.776	120.422	-1569.465	-1318.075	-1020.855	59.249
	1000.00	201.543	407.280	266.961	-1201.879	140.319	-1609.159	-1314.023	-988.045	51.610
	1067.00	205.000	420.461	276.190	-1188.260	153.938	-1636.892	-1311.166	-966.298	47.305
			23.136		24.686					
LIQ	1067.00	204.598	443.597	276.190	-1163.574	178.624	-1636.892	-1286.480	-966.298	47.305
	1100.00	204.598	449.829	281.306	-1156.822	185.376	-1651.634	-1285.081	-956.416	45.416
	1200.00	204.598	467.631	296.102	-1136.363	205.835	-1697.520	-1474.596	-921.836	40.126
	1300.00	204.598	484.008	309.935	-1115.903	226.295	-1745.113	-1469.090	-875.997	35.198
	1400.00	204.598	499.170	322.917	-1095.443	246.755	-1794.281	-1463.809	-830.574	30.989
	1500.00	204.598	513.286	335.143	-1074.983	267.215	-1844.912	-1458.745	-785.521	27.354
	1600.00	204.598	526.490	346.694	-1054.524	287.674	-1896.908	-1453.924	-740.798	24.185

References

Phase	H / S	C _p
SOL-A	Nb1	Tk1,e
SOL-B	Tk1	Ku1
LIQ	Tk1	Ku1

Phase	T [K]	C_p	S	$-(G-H298)/T$	H	H-H298	G	ΔH_f	ΔG_f	$\log K_f$
		[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{J}}{\text{K mol}}$]	[-]
SOL	298.15	46.853	51.212	51.212	-575.384	0.000	-590.653	-575.384	-545.080	95.496
	300.00	46.923	51.502	51.213	-575.297	0.087	-590.748	-575.378	-544.892	94.874
	400.00	49.598	65.410	53.091	-570.457	4.927	-596.620	-577.766	-534.565	69.807
	500.00	51.260	76.665	56.716	-565.410	9.974	-603.742	-577.502	-523.792	54.720
	600.00	52.679	86.137	60.851	-560.212	15.172	-611.894	-577.057	-513.089	44.668
	700.00	54.123	94.364	65.063	-554.873	20.511	-620.928	-576.445	-502.473	37.495
	800.00	55.710	101.693	69.192	-549.383	26.001	-630.737	-575.667	-491.957	32.121
	900.00	57.493	108.356	73.178	-543.724	31.660	-641.245	-574.720	-481.548	27.948
	1000.00	59.503	114.515	77.008	-537.877	37.507	-652.392	-573.599	-471.254	24.616
	1100.00	61.757	120.290	80.683	-531.816	43.568	-664.135	-572.300	-461.081	21.895
	1200.00	64.266	125.769	84.213	-525.517	49.867	-676.440	-667.576	-448.594	19.527
	1269.00	66.148	129.414	86.572	-521.018	54.366	-685.244	-665.803	-436.052	17.949
			26.277		33.346					
LIQ	1269.00	70.567	155.691	86.572	-487.672	87.712	-685.244	-632.457	-436.052	17.949
	1300.00	70.567	157.394	88.241	-485.485	89.899	-690.097	-631.496	-431.265	17.328
	1400.00	70.567	162.624	93.370	-478.428	96.956	-706.101	-628.399	-415.979	15.520
	1500.00	70.567	167.493	98.151	-471.371	104.013	-722.610	-625.309	-400.914	13.961
	1600.00	70.567	172.047	102.628	-464.314	111.070	-739.589	-622.226	-386.055	12.603
	1700.00	70.567	176.325	106.839	-457.258	118.126	-757.010	-619.149	-371.389	11.411
	1800.00	70.567	180.359	110.812	-450.201	125.183	-774.846	-616.078	-356.903	10.357
	1900.00	70.567	184.174	114.574	-443.144	132.240	-793.075	-613.012	-342.588	9.418
	2000.00	70.567	187.794	118.145	-436.087	139.297	-811.675	-609.952	-328.435	8.578

References

Phase	H / S	C_p
SOL	Ja1	Ja1
LIQ	Ja1	e

41.988

SODIUM FLUORIDE (GAS)

NaF[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _r [-]
GAS	298.15	34.132	217.606	217.606	-290.453	0.000	-355.332	-290.453	-309.759	54.269
	300.00	34.173	217.818	217.607	-290.390	0.063	-355.735	-290.471	-309.879	53.955
	400.00	35.652	227.880	218.969	-286.889	3.564	-378.041	-294.198	-315.985	41.263
	500.00	36.377	235.921	221.582	-283.283	7.170	-401.244	-295.376	-321.294	33.565
	600.00	36.807	242.595	224.544	-279.623	10.830	-425.180	-296.467	-326.374	28.413
	700.00	37.096	248.291	227.540	-275.927	14.526	-449.731	-297.499	-331.276	24.720
	800.00	37.311	253.260	230.451	-272.206	18.247	-474.814	-298.490	-336.033	21.941
	900.00	37.483	257.664	233.234	-268.466	21.987	-500.364	-299.461	-340.668	19.772
	1000.00	37.627	261.621	235.879	-264.710	25.743	-526.332	-300.433	-345.194	18.031
	1100.00	37.754	265.214	238.385	-260.941	29.512	-552.676	-301.425	-349.623	16.602
	1200.00	37.869	268.504	240.759	-257.160	33.293	-579.364	-399.219	-351.518	15.301
	1300.00	37.976	271.539	243.012	-253.368	37.085	-606.368	-399.379	-347.537	13.964
	1400.00	38.076	274.357	245.151	-249.565	40.888	-633.665	-399.536	-343.543	12.818
	1500.00	38.172	276.987	247.187	-245.752	44.701	-661.234	-399.691	-339.538	11.824
	1600.00	38.265	279.454	249.127	-241.931	48.522	-689.057	-399.843	-335.523	10.954
	1700.00	38.355	281.776	250.980	-238.100	52.353	-717.119	-399.991	-331.498	10.186
	1800.00	38.442	283.971	252.753	-234.260	56.193	-745.408	-400.137	-327.465	9.503
	1900.00	38.528	286.052	254.451	-230.411	60.042	-773.910	-400.279	-323.424	8.892
	2000.00	38.613	288.030	256.081	-226.554	63.899	-802.615	-400.418	-319.375	8.341
	2100.00	38.697	289.916	257.648	-222.689	67.764	-831.513	-400.555	-315.319	7.843
	2200.00	38.780	291.718	259.156	-218.815	71.638	-860.595	-400.688	-311.258	7.390
	2300.00	38.862	293.444	260.609	-214.933	75.520	-889.854	-400.820	-307.190	6.976
	2400.00	38.943	295.100	262.012	-211.042	79.411	-919.282	-400.951	-303.116	6.597
	2500.00	39.024	296.691	263.368	-207.144	83.309	-948.872	-401.081	-299.037	6.248

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Na2F2[g]

DISODIUM DIFLUORIDE (GAS)

83.976

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
GAS	298.15	70.817	287.550	287.550	-846.423	0.000	-932.156	-846.423	-841.010	147.341
	300.00	70.942	287.989	287.552	-846.292	0.131	-932.688	-846.454	-840.976	146.427
	400.00	75.711	309.132	290.402	-838.931	7.492	-962.584	-853.549	-838.473	109.493
	500.00	78.184	326.319	295.921	-831.224	15.199	-994.384	-855.408	-834.483	87.178
	600.00	79.616	340.711	302.220	-823.328	23.095	-1027.755	-857.018	-830.143	72.270
	700.00	80.515	353.057	308.621	-815.318	31.105	-1062.458	-858.462	-825.548	61.603
	800.00	81.114	363.849	314.864	-807.235	39.188	-1098.315	-859.803	-820.754	53.590
	900.00	81.532	373.429	320.849	-799.101	47.322	-1135.187	-861.092	-815.795	47.348
	1000.00	81.835	382.036	326.545	-790.932	55.491	-1172.968	-862.378	-810.693	42.346
	1100.00	82.061	389.847	331.950	-782.737	63.686	-1211.568	-863.705	-805.461	38.248
	1200.00	82.234	396.994	337.077	-774.522	71.901	-1250.915	-1058.640	-795.223	34.615
	1300.00	82.368	403.582	341.943	-766.292	80.131	-1290.948	-1058.314	-773.285	31.071
	1400.00	82.474	409.690	346.566	-758.049	88.374	-1331.616	-1057.992	-751.372	28.034
	1500.00	82.559	415.383	350.966	-749.797	96.626	-1372.873	-1057.674	-729.481	25.403
	1600.00	82.629	420.714	355.161	-741.538	104.885	-1414.680	-1057.362	-707.612	23.101
	1700.00	82.685	425.725	359.166	-733.272	113.151	-1457.005	-1057.055	-685.762	21.071
	1800.00	82.732	430.453	362.996	-725.001	121.422	-1499.816	-1056.755	-663.930	19.267
	1900.00	82.772	434.927	366.665	-716.726	129.697	-1543.087	-1056.462	-642.114	17.653
	2000.00	82.804	439.173	370.185	-708.447	137.976	-1586.794	-1056.175	-620.314	16.201

References

Phase	H / S	C _p
GAS	Ja1	Ja1

NaH

SODIUM HYDRIDE

23.998

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
SOL	298.15	36.406	40.016	40.016	-56.442	0.000	-68.373	-56.442	-33.550	5.878
	300.00	36.522	40.241	40.016	-56.375	0.067	-68.447	-56.453	-33.408	5.817
	400.00	42.480	51.590	41.523	-52.415	4.027	-73.051	-59.568	-25.441	3.322
	500.00	47.125	61.592	44.557	-47.925	8.517	-78.720	-59.640	-16.890	1.764
	600.00	50.740	70.515	48.153	-43.025	13.417	-85.334	-59.221	-8.372	0.729
	700.00	53.713	78.566	51.932	-37.798	18.644	-92.794	-58.415	0.044	-0.003

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 NDPT= 700.

23.998

SODIUM HYDRIDE (GAS)

NaH[g]

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		
GAS	298.15	30.160	188.389	188.389	124.265	0.000	68.097	124.265	102.919	-18.031
	300.00	30.207	188.576	188.390	124.321	0.056	67.748	124.242	102.787	-17.897
	400.00	32.079	197.548	189.601	127.444	3.179	48.425	120.291	96.035	-12.541
	500.00	33.266	204.842	191.942	130.715	6.450	28.294	118.999	90.125	-9.415
	600.00	34.158	210.989	194.618	134.088	9.823	7.494	117.891	84.456	-7.353
	700.00	34.889	216.311	197.345	137.541	13.276	-13.876	116.924	78.962	-5.892
	800.00	35.515	221.011	200.015	141.062	16.797	-35.747	116.059	73.599	-4.806
	900.00	36.063	225.227	202.586	144.642	20.377	-58.063	115.264	68.340	-3.966
	1000.00	36.547	229.052	205.044	148.273	24.008	-80.779	114.506	63.167	-3.300
	1100.00	36.975	232.556	207.388	151.949	27.684	-103.862	113.755	58.069	-2.757
	1200.00	37.351	235.789	209.622	155.666	31.401	-127.282	16.221	55.482	-2.415
	1300.00	37.679	238.792	211.752	159.418	35.153	-151.012	16.334	58.749	-2.361
	1400.00	37.961	241.595	213.785	163.200	38.935	-175.033	16.456	62.007	-2.314
	1500.00	38.198	244.223	215.727	167.008	42.743	-199.326	16.582	65.256	-2.272
	1600.00	38.391	246.694	217.586	170.838	46.573	-223.873	16.707	68.497	-2.236
	1700.00	38.540	249.027	219.368	174.685	50.420	-248.660	16.828	71.730	-2.204
	1800.00	38.647	251.233	221.077	178.545	54.280	-273.674	16.942	74.957	-2.175
	1900.00	38.711	253.324	222.720	182.413	58.148	-298.903	17.045	78.177	-2.149
	2000.00	38.732	255.310	224.300	186.286	62.021	-324.335	17.132	81.392	-2.126
	2100.00	38.712	257.200	225.822	190.158	65.893	-349.961	17.201	84.603	-2.104
	2200.00	38.650	258.999	227.290	194.027	69.762	-375.772	17.248	87.811	-2.085
	2273.00	38.578	260.260	228.328	196.846	72.581	-394.725	17.265	90.153	-2.072

References

Phase	H / S	C _p
GAS	Ja1	Ja1

84.007

SODIUM HYDROGEN CARBONATE

NaHCO3

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		
SOL	298.15	87.610	101.701	101.701	-950.810	0.000	-981.132	-950.810	-852.851	149.416
	300.00	87.877	102.243	101.702	-950.648	0.162	-981.321	-950.824	-852.243	148.389
	400.00	102.265	129.494	105.321	-941.141	9.669	-992.938	-953.885	-819.095	106.963
	500.00	116.654	153.860	112.629	-930.195	20.615	-1007.125	-953.421	-785.428	82.053

References

Phase	H / S	C _p
SOL	La1	La1,e

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
SOL	298.15	52.225	98.324	98.324	-287.859	0.000	-317.174	-287.859	-284.519	49.847
	300.00	52.260	98.647	98.325	-287.762	0.097	-317.356	-287.865	-284.498	49.536
	400.00	53.793	113.903	100.395	-282.456	5.403	-328.017	-298.999	-282.828	36.933
	500.00	55.047	126.044	104.351	-277.012	10.847	-340.034	-320.754	-276.685	28.905
	600.00	56.219	136.184	108.834	-271.449	16.410	-353.160	-320.082	-267.932	23.326
	700.00	57.360	144.937	113.381	-265.770	22.089	-367.225	-319.236	-259.304	19.350
	800.00	58.488	152.670	117.818	-259.977	27.882	-382.113	-318.239	-250.809	16.376
	900.00	59.611	159.623	122.083	-254.072	33.787	-397.733	-317.111	-242.447	14.071
	933.00	59.980	161.777	123.449	-252.099	35.760	-403.037	-316.715	-239.716	13.421
LIQ			25.293		23.598					
	933.00	64.852	187.069	123.449	-228.501	59.358	-403.037	-293.117	-239.716	13.421
	1000.00	64.852	191.567	127.864	-224.156	63.703	-415.723	-291.976	-235.922	12.323
	1100.00	64.852	197.748	133.940	-217.671	70.188	-435.193	-290.297	-230.398	10.941
	1200.00	64.852	203.391	139.496	-211.186	76.673	-455.254	-385.423	-222.584	9.689
	1300.00	64.852	208.582	144.613	-204.700	83.159	-475.856	-382.920	-209.116	8.402
	1400.00	64.852	213.388	149.356	-198.215	89.644	-496.958	-380.421	-195.840	7.307
	1500.00	64.852	217.862	153.776	-191.730	96.129	-518.523	-377.924	-182.743	6.364
	1600.00	64.852	222.047	157.914	-185.245	102.614	-540.521	-375.431	-169.812	5.544

References

Phase	H / S	C _p
SOL	Ja1	Ja1
LIQ	Ja1	Ja1

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-A	298.15	141.709	159.410	159.410	-1469.002	0.000	-1516.530	-1469.002	-1354.993	237.389
	300.00	141.854	160.287	159.413	-1468.740	0.262	-1516.826	-1468.997	-1354.286	235.802
	400.00	149.712	202.172	165.071	-1454.161	14.841	-1535.030	-1474.057	-1315.673	171.809
	500.00	157.569	236.424	176.014	-1438.797	30.205	-1557.009	-1473.563	-1276.119	133.315
	600.00	165.427	265.847	188.589	-1422.648	46.354	-1582.156	-1472.383	-1236.730	107.667
	700.00	173.285	291.937	201.523	-1405.712	63.290	-1610.068	-1470.533	-1197.591	89.365
	724.00	175.170	297.811	204.618	-1401.530	67.472	-1617.145	-1469.990	-1188.242	85.728
SOL-B			32.362		23.430					
	724.00	189.535	330.173	204.618	-1378.100	90.902	-1617.145	-1446.560	-1188.242	85.728
	800.00	189.535	349.092	217.459	-1363.696	105.306	-1642.969	-1443.728	-1161.271	75.823
	858.00	189.535	362.358	226.811	-1352.703	116.299	-1663.606	-1441.622	-1140.867	69.455
SOL-C			2.340		2.008					
	858.00	200.832	364.698	226.811	-1350.695	118.307	-1663.606	-1439.614	-1140.867	69.455
	900.00	200.832	374.296	233.472	-1342.260	126.742	-1679.126	-1437.645	-1126.291	65.368
	908.00	200.832	376.074	234.720	-1340.653	128.349	-1682.128	-1437.273	-1123.525	64.633
SOL-D			10.045		9.121					
	908.00	205.016	386.119	234.720	-1331.532	137.470	-1682.128	-1428.152	-1123.525	64.633
	961.00	205.016	397.749	243.394	-1320.666	148.336	-1702.903	-1425.493	-1105.820	60.106
			23.336		22.426					
LIQ	961.00	213.384	421.085	243.394	-1298.240	170.762	-1702.903	-1403.067	-1105.820	60.106
	1000.00	213.384	429.574	250.490	-1289.918	179.084	-1719.492	-1400.815	-1093.802	57.134
	1100.00	213.384	449.912	267.710	-1268.580	200.422	-1763.483	-1395.176	-1063.376	50.495
	1200.00	213.384	468.478	283.678	-1247.242	221.760	-1809.416	-1583.276	-1028.572	44.773
	1300.00	213.384	485.558	298.559	-1225.903	243.099	-1857.129	-1576.240	-982.632	39.483
	1400.00	213.384	501.372	312.488	-1204.565	264.437	-1906.485	-1569.334	-937.230	34.968
	1500.00	213.384	516.094	325.577	-1183.226	285.776	-1957.367	-1562.559	-892.317	31.073
	1600.00	213.384	529.865	337.919	-1161.888	307.114	-2009.672	-1555.920	-847.852	27.680

References

Phase	H / S	C _p
SOL-A	Tk1	Tk1,e
SOL-B	Tk1	e
SOL-C	Tk1	e
SOL-D	Tk1	e
LIQ	Tk1	e

NaNO2

SODIUM NITRITE

68.995

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	69.037	121.336	121.336	-358.987	0.000	-395.163	-358.987	-290.093	50.823
	300.00	69.400	121.764	121.337	-358.859	0.128	-395.388	-358.992	-289.666	50.435
	400.00	89.023	144.417	124.294	-350.938	8.049	-408.704	-361.122	-266.384	34.786
	500.00	108.646	166.390	130.524	-341.054	17.933	-424.249	-358.869	-242.920	25.378
	557.00	119.831	178.712	134.826	-334.543	24.444	-434.085	-356.721	-229.814	21.552
LIQ			26.817		14.937					
	557.00	121.336	205.529	134.826	-319.606	39.381	-434.085	-341.784	-229.814	21.552
	600.00	121.336	214.552	140.220	-314.388	44.599	-443.119	-339.870	-221.243	19.261
	700.00	121.336	233.256	152.210	-302.255	56.732	-465.534	-335.465	-201.820	15.060
	800.00	121.336	249.458	163.375	-290.121	68.866	-489.687	-331.132	-183.025	11.950
	900.00	121.336	263.749	173.750	-277.988	80.999	-515.362	-326.879	-164.768	9.563
	1000.00	121.336	276.533	183.400	-265.854	93.133	-542.387	-322.715	-146.980	7.677

References

Phase	H / S	C _p
SOL	Tk1	Tk1,e
LIQ	Tk1	e

NaNO3

SODIUM NITRATE

84.995

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-1	298.15	93.040	116.315	116.315	-467.980	0.000	-502.659	-467.980	-367.007	64.298
	300.00	93.458	116.892	116.317	-467.807	0.173	-502.875	-467.968	-366.381	63.793
	400.00	116.047	146.872	120.252	-457.332	10.648	-516.081	-469.030	-332.499	43.420
	500.00	138.637	175.194	128.430	-444.598	23.382	-532.195	-465.455	-298.735	31.209
	548.00	149.480	188.392	133.106	-437.683	30.297	-540.922	-462.966	-282.842	26.960
SOL-2			7.208		3.950					
	548.00	149.480	195.600	133.106	-433.733	34.247	-540.922	-459.016	-282.842	26.960
	579.00	156.482	204.016	136.677	-428.991	38.989	-547.116	-457.144	-272.927	24.622
LIQ			26.774		15.502					
	579.00	155.603	230.790	136.677	-413.489	54.491	-547.116	-441.642	-272.927	24.622
	600.00	155.603	236.333	140.069	-410.221	57.759	-552.021	-440.325	-266.831	23.230
	700.00	155.603	260.320	155.578	-394.661	73.319	-576.885	-434.120	-238.408	17.790
	800.00	155.603	281.098	169.998	-379.101	88.879	-603.979	-428.029	-210.866	13.768
	900.00	155.603	299.425	183.381	-363.540	104.440	-633.023	-422.052	-184.081	10.684
	1000.00	155.603	315.819	195.819	-347.980	120.000	-663.799	-416.192	-157.955	8.251

References

Phase	H / S	C _p
SOL-1	St3	La1
SOL-2	St3	La1
LIQ	St3	La1

38.989

SODIUM MONOXIDE (GAS)

NaO[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	35.146	228.974	228.974	83.680	0.000	15.411	83.680	61.335	-10.746
	300.00	35.173	229.192	228.975	83.745	0.065	14.988	83.666	61.196	-10.655
	400.00	36.220	239.470	230.369	87.320	3.640	-8.468	80.134	54.040	-7.057
	500.00	36.809	247.621	233.032	90.974	7.294	-32.836	79.157	47.632	-4.976
	600.00	37.186	254.368	236.042	94.675	10.995	-57.945	78.262	41.412	-3.605
	700.00	37.455	260.121	239.081	98.408	14.728	-83.677	77.416	35.338	-2.637
	800.00	37.662	265.136	242.031	102.164	18.484	-109.945	76.594	29.383	-1.919
	900.00	37.832	269.583	244.850	105.939	22.259	-136.685	75.779	23.531	-1.366
	1000.00	37.978	273.576	247.526	109.730	26.050	-163.846	74.952	17.769	-0.928
	1100.00	38.109	277.202	250.062	113.534	29.854	-191.388	74.093	12.092	-0.574
	1200.00	38.228	280.523	252.464	117.351	33.671	-219.277	-23.575	8.936	-0.389
	1300.00	38.340	283.588	254.742	121.180	37.500	-247.484	-23.617	11.647	-0.468
	1400.00	38.445	286.433	256.905	125.019	41.339	-275.987	-23.663	14.361	-0.536
	1500.00	38.546	289.089	258.963	128.869	45.189	-304.765	-23.713	17.079	-0.595
	1600.00	38.644	291.580	260.925	132.728	49.048	-333.799	-23.765	19.800	-0.646
	1700.00	38.740	293.925	262.797	136.597	52.917	-363.076	-23.821	22.525	-0.692
	1800.00	38.833	296.142	264.589	140.476	56.796	-392.580	-23.879	25.253	-0.733
	1900.00	38.925	298.244	266.305	144.364	60.684	-422.300	-23.940	27.984	-0.769
	2000.00	39.015	300.243	267.953	148.261	64.581	-452.225	-24.005	30.718	-0.802
	2100.00	39.105	302.149	269.536	152.167	68.487	-482.346	-24.072	33.456	-0.832
	2200.00	39.193	303.970	271.060	156.082	72.402	-512.652	-24.144	36.197	-0.859

References

Phase	H / S	C _p
GAS	Ja1	Ja1

54.989

SODIUM SUPEROXIDE

NaO2

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	72.133	115.897	115.897	-260.663	0.000	-295.218	-260.663	-218.712	38.317
	300.00	72.208	116.343	115.898	-260.529	0.134	-295.432	-260.636	-218.452	38.036
	400.00	76.294	137.676	118.779	-253.104	7.559	-308.175	-261.803	-204.405	26.693
	500.00	80.379	155.139	124.355	-245.271	15.392	-322.840	-260.130	-190.241	19.874
	600.00	84.464	170.155	130.764	-237.029	23.634	-339.122	-258.064	-176.451	15.361
	700.00	88.549	183.482	137.360	-228.378	32.285	-356.815	-255.619	-163.037	12.166
	800.00	92.635	195.573	143.892	-219.319	41.344	-375.777	-252.806	-149.998	9.794
	825.00	93.656	198.439	145.502	-216.990	43.673	-380.702	-252.046	-146.797	9.294

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 MPT= 825.

Phase	T [K]	C _p [J / (K mol)	S J / (K mol)	-(G-H298)/T []	H [kJ / mol	H-H298 kJ / mol	G kJ / mol	ΔH _f []	ΔG _f []	log K _f [-]
SOL-C	298.15	68.892	75.040	75.040	-417.982	0.000	-440.355	-417.982	-379.090	66.415
	300.00	69.070	75.467	75.041	-417.854	0.128	-440.494	-417.986	-378.849	65.963
	400.00	76.424	96.432	77.850	-410.549	7.433	-449.122	-423.409	-365.368	47.712
	500.00	81.373	114.046	83.375	-402.647	15.335	-459.669	-423.238	-350.864	36.654
	600.00	85.204	129.233	89.781	-394.311	23.671	-471.851	-422.515	-336.449	29.290
	700.00	88.359	142.611	96.391	-385.628	32.354	-485.456	-421.363	-322.190	24.042
	800.00	91.021	154.588	102.930	-376.656	41.326	-500.326	-419.877	-308.121	20.118
	900.00	93.279	165.443	109.283	-367.437	50.545	-516.336	-418.137	-294.253	17.078
	1000.00	95.180	175.373	115.402	-358.012	59.970	-533.384	-416.216	-280.590	14.657
	1023.35	95.576	177.574	116.796	-355.784	62.198	-537.505	-415.750	-277.429	14.161
SOL-B			1.717		1.757					
	1023.35	95.576	179.291	116.796	-354.027	63.955	-537.505	-413.993	-277.429	14.161
	1100.00	96.749	186.237	121.395	-346.655	71.327	-551.516	-412.431	-267.257	12.691
	1200.00	98.003	194.712	127.156	-336.915	81.067	-570.569	-603.887	-249.269	10.850
	1243.35	98.451	198.198	129.572	-332.657	85.325	-579.086	-602.206	-236.488	9.935
SOL-A			9.590		11.924					
	1243.35	98.451	207.788	129.572	-320.733	97.249	-579.086	-590.282	-236.488	9.935
	1300.00	98.951	212.186	133.077	-315.141	102.841	-590.982	-588.062	-220.418	8.857
	1400.00	99.601	219.544	138.994	-305.211	112.771	-612.573	-584.096	-192.286	7.174
	1405.35	99.627	219.924	139.301	-304.678	113.304	-613.749	-583.882	-190.789	7.091
LIQ			33.940		47.698					
	1405.35	104.600	253.865	139.301	-256.980	161.002	-613.749	-536.184	-190.789	7.091
	1500.00	104.600	260.682	146.747	-247.080	170.902	-638.103	-531.942	-167.667	5.839
	1600.00	104.600	267.433	154.082	-236.620	181.362	-664.512	-527.473	-143.528	4.686
	1700.00	104.600	273.774	160.938	-226.160	191.822	-691.576	-523.017	-119.668	3.677
	1800.00	104.600	279.753	167.374	-215.700	202.282	-719.255	-518.573	-96.069	2.788
	1900.00	104.600	285.409	173.439	-205.240	212.742	-747.516	-514.142	-72.718	1.999
	2000.00	104.600	290.774	179.173	-194.780	223.202	-776.327	-509.723	-49.599	1.295
	2100.00	104.600	295.877	184.609	-184.320	233.662	-805.662	-505.318	-26.702	0.664
	2200.00	104.600	300.743	189.779	-173.860	244.122	-835.495	-500.927	-4.013	0.095
	2223.00	104.600	301.831	190.932	-171.454	246.528	-842.424	-499.919	1.176	-0.028

References

Phase	H / S	C _p	Remarks
SOL-C	Ja1	Ja1	
SOL-B	Ja1	Ja1	
SOL-A	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 NDPT= 2223.

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _r [— —]
SOL-A	298.15	89.248	94.809	94.809	-513.209	0.000	-541.476	-513.209	-449.629	78.773
	300.00	89.426	95.362	94.811	-513.044	0.165	-541.652	-513.202	-449.235	78.219
	400.00	97.720	122.287	98.426	-503.665	9.544	-552.579	-518.037	-427.563	55.834
	500.00	103.768	144.775	105.508	-493.575	19.634	-565.963	-517.209	-405.026	42.313
	600.00	108.446	164.123	113.702	-482.956	30.253	-581.430	-515.782	-382.715	33.318
	700.00	112.332	181.140	122.145	-471.912	41.297	-598.710	-513.897	-360.681	26.914
	785.00	115.251	194.180	129.249	-462.238	50.971	-614.670	-512.003	-342.184	22.769
SOL-B			7.302		5.732					
	785.00	113.596	201.482	129.249	-456.506	56.703	-614.670	-506.271	-342.184	22.769
	800.00	113.596	203.632	130.624	-454.802	58.407	-617.708	-505.942	-339.052	22.138
	900.00	113.596	217.012	139.494	-443.443	69.766	-638.753	-503.762	-318.322	18.475
	948.00	113.596	222.914	143.569	-437.990	75.219	-649.313	-502.734	-308.459	16.996

References

Phase	H / S	C _p	Remarks
SOL-A	Ja1	Ja1	
SOL-B	Ja1	Ja1	Ja1 MPT= 948.

NaAlO2

SODIUM ALUMINATE

81.970

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-A	298.15	73.535	70.400	70.400	-1133.195	0.000	-1154.185	-1133.195	-1069.249	187.328
	300.00	73.811	70.856	70.401	-1133.059	0.136	-1154.315	-1133.210	-1068.852	186.104
	400.00	84.058	93.673	73.443	-1125.103	8.092	-1162.572	-1136.354	-1047.104	136.738
	500.00	89.622	113.078	79.481	-1116.397	16.798	-1172.935	-1136.448	-1024.771	107.057
	600.00	93.343	129.765	86.504	-1107.238	25.957	-1185.097	-1136.221	-1002.453	87.271
	700.00	96.194	144.375	93.749	-1097.757	35.438	-1198.819	-1135.813	-980.189	73.143
	740.00	97.190	149.749	96.632	-1093.889	39.306	-1204.703	-1135.620	-971.302	68.562
			1.753		1.297					
SOL-B	740.00	97.190	151.501	96.632	-1092.592	40.603	-1204.703	-1134.323	-971.302	68.562
	800.00	98.581	159.133	101.036	-1086.718	46.477	-1214.024	-1134.022	-958.096	62.557
	900.00	100.698	170.868	108.154	-1076.752	56.443	-1230.533	-1133.538	-936.135	54.332
	1000.00	102.648	181.580	114.969	-1066.584	66.611	-1248.164	-1143.663	-913.465	47.715
	1100.00	104.488	191.450	121.479	-1056.226	76.969	-1266.821	-1142.898	-890.482	42.285
	1200.00	106.254	200.618	127.696	-1045.689	87.506	-1286.430	-1238.795	-865.131	37.658
	1300.00	107.968	209.191	133.639	-1034.977	98.218	-1306.925	-1236.920	-834.068	33.513
	1400.00	109.643	217.253	139.326	-1024.097	109.098	-1328.251	-1234.906	-803.154	29.966
	1500.00	111.290	224.874	144.777	-1013.050	120.145	-1350.361	-1232.754	-772.389	26.897
	1600.00	112.916	232.109	150.011	-1001.839	131.356	-1373.213	-1230.464	-741.772	24.216
	1700.00	114.525	239.003	155.045	-990.467	142.728	-1396.772	-1228.037	-711.302	21.856
	1800.00	116.122	245.594	159.894	-978.935	154.260	-1421.004	-1225.475	-680.979	19.761
	1900.00	117.708	251.915	164.572	-967.243	165.952	-1445.881	-1222.777	-650.802	17.892

References

Phase	H / S	C _p
SOL-A	Ja1	Ja1
SOL-B	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S —(G-H298)/T [————— kJ / mol —————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]	
SOL-A	298.15	115.811	124.298	124.298	-2094.661	0.000	-2131.721	-2094.661	-1980.009	346.889
	300.00	116.357	125.016	124.301	-2094.446	0.215	-2131.951	-2094.689	-1979.297	344.626
	400.00	145.896	162.536	129.217	-2081.334	13.327	-2146.348	-2097.769	-1940.502	253.404
	467.00	165.687	186.623	135.733	-2070.896	23.765	-2158.048	-2096.767	-1914.223	214.109
SOL-B			0.000		0.000					
	467.00	143.430	186.623	135.733	-2070.896	23.765	-2158.048	-2096.767	-1914.223	214.109
	500.00	145.645	196.491	139.420	-2066.126	28.535	-2164.371	-2096.700	-1901.326	198.630
	600.00	152.356	223.638	151.246	-2051.226	43.435	-2185.409	-2096.267	-1862.286	162.126
	700.00	159.067	247.628	163.333	-2035.655	59.006	-2208.994	-2095.473	-1823.347	136.060
	800.00	165.778	269.307	175.246	-2019.412	75.249	-2234.858	-2094.324	-1784.546	116.519
	900.00	172.490	289.220	186.818	-2002.499	92.162	-2262.797	-2092.858	-1745.908	101.330
	1000.00	179.201	307.741	197.994	-1984.914	109.747	-2292.655	-2101.639	-1706.691	89.148
	1100.00	185.912	325.135	208.770	-1966.659	128.002	-2324.308	-2099.141	-1667.313	79.174
	1180.00	191.281	338.373	217.111	-1951.571	143.090	-2350.852	-2193.716	-1635.204	72.385
SOL-C			0.000		0.000					
	1180.00	178.521	338.373	217.111	-1951.571	143.090	-2350.852	-2193.716	-1635.204	72.385
	1200.00	178.632	341.375	219.157	-1948.000	146.661	-2357.649	-2193.164	-1625.742	70.767
	1300.00	179.184	355.695	229.116	-1930.109	164.552	-2392.512	-2190.435	-1578.568	63.428
	1400.00	179.736	368.994	238.638	-1912.163	182.498	-2428.754	-2187.753	-1531.602	57.145
	1500.00	180.289	381.413	247.747	-1894.161	200.500	-2466.281	-2185.112	-1484.827	51.706
	1525.00	180.427	384.394	249.963	-1889.653	205.008	-2475.854	-2184.458	-1473.161	50.459

References

Phase	H / S	C _p
SOL-A	Nb1	S5
SOL-B	u	S5
SOL-C	u	S5

NaAlSi2O6

JADEITE

202.139

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
SOL	298.15	159.878	133.499	133.499	-3032.760	0.000	-3072.563	-3032.760	-2854.075	500.022
	300.00	160.654	134.490	133.502	-3032.464	0.296	-3072.811	-3032.798	-2852.966	496.746
	400.00	189.574	185.166	140.215	-3014.780	17.980	-3088.846	-3036.400	-2792.623	364.679
	500.00	205.526	229.320	153.725	-2994.963	37.797	-3109.623	-3036.060	-2731.696	285.378
	600.00	216.375	267.801	169.601	-2973.840	58.920	-3134.521	-3034.940	-2670.919	232.524
	700.00	224.813	301.811	186.106	-2951.766	80.994	-3163.034	-3033.347	-2610.369	194.788
	800.00	231.966	332.308	202.508	-2928.920	103.840	-3194.766	-3031.439	-2550.071	166.503
	900.00	238.373	360.006	218.492	-2905.398	127.362	-3229.403	-3029.332	-2490.025	144.517
	1000.00	244.316	385.431	233.932	-2881.260	151.500	-3266.692	-3037.631	-2429.462	126.902
	1100.00	249.956	408.984	248.788	-2856.545	176.215	-3306.427	-3034.837	-2368.778	112.484
	1200.00	255.390	430.967	263.064	-2831.276	201.484	-3348.436	-3128.499	-2305.921	100.374

References

Phase	H / S	C _p
SOL	Nb1	S5

NaAlSi2O6[D]

DEHYDRATED ANALCITE

202.139

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
SOL	298.15	164.430	175.301	175.301	-2985.301	0.000	-3037.567	-2985.301	-2819.080	493.891
	300.00	165.206	176.321	175.304	-2984.996	0.305	-3037.892	-2985.330	-2818.048	490.666
	400.00	194.126	228.306	182.196	-2966.857	18.444	-3058.179	-2988.478	-2761.956	360.674
	500.00	210.079	273.476	196.044	-2946.585	38.716	-3083.323	-2987.682	-2705.396	282.631
	600.00	220.927	312.787	212.297	-2925.007	60.294	-3112.679	-2986.107	-2649.077	230.623
	700.00	229.365	347.499	229.180	-2902.478	82.823	-3145.727	-2984.059	-2593.062	193.497
	800.00	236.519	378.604	245.948	-2879.176	106.125	-3182.059	-2981.696	-2537.364	165.673
	900.00	242.925	406.837	262.279	-2855.199	130.102	-3221.352	-2979.133	-2481.975	144.050
	1000.00	248.869	432.743	278.048	-2830.606	154.695	-3263.349	-2986.977	-2426.120	126.727
	1100.00	254.509	456.729	293.215	-2805.435	179.866	-3307.837	-2983.728	-2370.189	112.551
	1200.00	259.942	479.108	307.784	-2779.711	205.590	-3354.641	-3076.935	-2312.126	100.644

References

Phase	H / S	C _p
SOL	Nb1	Nb1,e

262.223

ALBITE

NaAlSi3O8

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	205.099	207.400	207.400	–3936.960	0.000	–3998.796	–3936.960	–3713.533	650.596
	300.00	206.075	208.672	207.404	–3936.580	0.380	–3999.181	–3937.005	–3712.147	646.342
	400.00	242.420	273.562	216.005	–3913.937	23.023	–4023.362	–3940.742	–3636.761	474.912
	500.00	262.366	329.975	233.293	–3888.619	48.341	–4053.607	–3940.239	–3560.799	371.994
	600.00	275.858	379.066	253.588	–3861.673	75.287	–4089.113	–3938.832	–3485.032	303.399
	700.00	286.302	422.402	274.669	–3833.547	103.413	–4129.228	–3936.890	–3409.546	254.423
	800.00	295.121	461.221	295.604	–3804.466	132.494	–4173.443	–3934.594	–3334.364	217.712
	900.00	302.997	496.443	315.992	–3774.554	162.406	–4221.353	–3932.062	–3259.486	189.176
	1000.00	310.285	528.748	335.675	–3743.886	193.074	–4272.635	–3939.903	–3184.140	166.322
	1100.00	317.191	558.648	354.602	–3712.510	224.450	–4327.023	–3936.612	–3108.720	147.621
	1200.00	323.836	586.534	372.781	–3680.457	256.503	–4384.297	–4029.738	–3031.174	131.944
	1300.00	330.297	612.711	390.240	–3647.749	289.211	–4444.273	–4024.841	–2948.156	118.458
	1393.00	336.185	635.734	405.868	–3616.756	320.204	–4502.334	–4019.935	–2871.301	107.668

References

Phase	H / S	C _p	Remarks
SOL	Nb1,Tk1	S5,Tk1	Tk1 MPT= 1393.

262.223

ANALBITE

NaAlSi3O8[A]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	204.810	226.400	226.400	–3927.659	0.000	–3995.160	–3927.659	–3709.897	649.959
	300.00	206.074	227.671	226.404	–3927.279	0.380	–3995.580	–3927.705	–3708.546	645.715
	400.00	251.913	294.093	235.149	–3904.081	23.578	–4021.718	–3930.887	–3635.118	474.698
	500.00	275.324	353.061	252.967	–3877.612	50.047	–4054.142	–3929.232	–3561.335	372.050
	600.00	289.906	404.634	274.041	–3849.303	78.356	–4092.083	–3926.462	–3488.002	303.658
	700.00	300.320	450.143	296.012	–3819.767	107.892	–4134.867	–3923.110	–3415.185	254.844
	800.00	308.512	490.798	317.864	–3789.312	138.347	–4181.950	–3919.439	–3342.872	218.267
	900.00	315.413	527.544	339.153	–3758.107	169.552	–4232.897	–3915.616	–3271.030	189.846
	1000.00	321.511	561.097	359.694	–3726.256	201.403	–4287.353	–3922.273	–3198.858	167.091
	1100.00	327.085	592.005	379.427	–3693.822	233.837	–4345.028	–3917.925	–3126.725	148.476
	1200.00	332.303	620.691	398.351	–3660.851	266.808	–4405.680	–4010.132	–3052.557	132.874
	1300.00	337.269	647.487	416.496	–3627.370	300.289	–4469.104	–4004.463	–2972.987	119.456
	1400.00	342.053	672.658	433.903	–3593.403	334.256	–4535.123	–3998.553	–2893.863	107.971
	1500.00	346.701	696.416	450.619	–3558.964	368.695	–4603.588	–3992.407	–2815.170	98.033

References

Phase	H / S	C _p
SOL	Nb1,Tk1	S5,Tk1

NaAlSi2O6*H2O

ANALCITE

220.154

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
							kJ / mol			
SOL	298.15	204.810	209.911	209.911	-3302.866	0.000	-3365.451	-3302.866	-3077.419	539.151
	300.00	206.074	211.182	209.915	-3302.486	0.380	-3365.841	-3302.901	-3076.020	535.583
	400.00	251.913	277.604	218.660	-3279.288	23.578	-3390.330	-3305.381	-3000.118	391.775
	500.00	275.324	336.572	236.478	-3252.819	50.047	-3421.105	-3302.841	-2924.061	305.475
	600.00	289.906	388.145	257.552	-3224.510	78.356	-3457.397	-3299.043	-2848.646	247.997
	700.00	300.320	433.654	279.523	-3194.974	107.892	-3498.532	-3294.553	-2773.928	206.993
	800.00	308.512	474.310	301.376	-3164.519	138.347	-3543.967	-3289.658	-2699.883	176.284

References

Phase	H / S	C _p
SOL	Nb1	e

NaOH

SODIUM HYDROXIDE

39.997

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
							kJ / mol			
SOL-A	298.15	59.570	64.434	64.434	-425.931	0.000	-445.142	-425.931	-379.737	66.528
	300.00	59.622	64.802	64.435	-425.821	0.110	-445.261	-425.927	-379.451	66.068
	400.00	64.937	82.565	66.822	-419.634	6.297	-452.660	-428.299	-363.788	47.506
	500.00	75.157	98.062	71.540	-412.670	13.261	-461.701	-427.428	-347.739	36.328
	572.00	85.552	108.828	75.557	-406.900	19.031	-469.149	-426.023	-336.352	30.715
			12.580		7.196					
SOL-B	572.00	85.552	121.409	75.557	-399.704	26.227	-469.149	-418.827	-336.352	30.715
	596.00	89.582	125.006	77.475	-397.602	28.329	-472.106	-418.179	-332.904	29.176
			11.092		6.611					
LIQ	596.00	86.102	136.099	77.475	-390.991	34.940	-472.106	-411.568	-332.904	29.176
	600.00	86.074	136.674	77.868	-390.647	35.284	-472.652	-411.466	-332.377	28.936
	700.00	85.454	149.895	87.239	-382.072	43.859	-486.998	-408.938	-319.396	23.834
	800.00	84.893	161.269	95.798	-373.555	52.376	-502.569	-406.475	-306.773	20.030
	900.00	84.326	171.235	103.638	-365.094	60.837	-519.205	-404.092	-294.454	17.090
	1000.00	83.742	180.089	110.848	-356.690	69.241	-536.779	-401.808	-282.396	14.751
	1100.00	83.146	188.043	117.511	-348.346	77.585	-555.193	-399.646	-270.560	12.848
	1200.00	82.544	195.252	123.694	-340.061	85.870	-574.363	-494.386	-256.475	11.164
	1300.00	81.944	201.835	129.455	-331.837	94.094	-594.222	-491.592	-236.763	9.513
	1400.00	81.351	207.886	134.844	-323.672	102.259	-614.713	-488.895	-217.262	8.106
	1500.00	80.772	213.479	139.902	-315.566	110.365	-635.784	-486.292	-197.951	6.893
	1600.00	80.208	218.674	144.665	-307.517	118.414	-657.395	-483.781	-178.811	5.838
	1700.00	79.664	223.520	149.163	-299.524	126.407	-679.508	-481.359	-159.825	4.911
	1800.00	79.142	228.059	153.421	-291.584	134.347	-702.089	-479.023	-140.979	4.091

References

Phase	H / S	C _p	Remarks
SOL-A	Nb1,Ja1	Ja1	
SOL-B	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 BPT= 1827.91, L= 175.31 kJ

39.997

SODIUM HYDROXIDE (GAS)

NaOH[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
GAS	298.15	48.350	228.430	228.430	–197.485	0.000	–265.591	–197.485	–200.187	35.072
	300.00	48.415	228.730	228.431	–197.395	0.090	–266.014	–197.501	–200.203	34.859
	400.00	50.673	243.014	230.363	–192.425	5.060	–289.630	–201.091	–200.759	26.216
	500.00	51.791	254.452	234.076	–187.297	10.188	–314.523	–202.055	–200.561	20.952
	600.00	52.533	263.964	238.287	–182.079	15.406	–340.457	–202.897	–200.182	17.427
	700.00	53.125	272.107	242.550	–176.795	20.690	–367.270	–203.662	–199.668	14.899
	800.00	53.653	279.236	246.700	–171.456	26.029	–394.845	–204.376	–199.048	12.997
	900.00	54.155	285.585	250.674	–166.065	31.420	–423.092	–205.063	–198.341	11.511
	1000.00	54.650	291.316	254.456	–160.625	36.860	–451.941	–205.743	–197.557	10.319
	1100.00	55.148	296.548	258.048	–155.135	42.350	–481.338	–206.436	–196.705	9.341
	1200.00	55.655	301.368	261.460	–149.595	47.890	–511.237	–303.920	–193.348	8.416
	1300.00	56.174	305.843	264.704	–144.004	53.481	–541.600	–303.759	–184.140	7.399
	1400.00	56.628	310.023	267.794	–138.363	59.122	–572.396	–303.586	–174.945	6.527
	1500.00	57.054	313.945	270.741	–132.679	64.806	–603.596	–303.405	–165.763	5.772
	1600.00	57.448	317.640	273.558	–126.954	70.531	–635.177	–303.218	–156.593	5.112
	1700.00	57.810	321.134	276.254	–121.191	76.294	–667.118	–303.026	–147.435	4.530
	1800.00	58.142	324.447	278.841	–115.393	82.092	–699.398	–302.832	–138.288	4.013
	1900.00	58.445	327.599	281.325	–109.563	87.922	–732.002	–302.638	–129.152	3.551
	2000.00	58.721	330.604	283.714	–103.705	93.780	–764.913	–302.446	–120.026	3.135
	2100.00	58.974	333.475	286.016	–97.820	99.665	–798.118	–302.257	–110.910	2.759
	2200.00	59.204	336.224	288.236	–91.911	105.574	–831.604	–302.074	–101.802	2.417
	2300.00	59.414	338.861	290.380	–85.980	111.505	–865.359	–301.898	–92.703	2.105
	2400.00	59.606	341.393	292.453	–80.029	117.456	–899.373	–301.731	–83.611	1.820
	2500.00	59.780	343.830	294.460	–74.059	123.426	–933.635	–301.575	–74.526	1.557

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Na2(OH)2[g]

DISODIUM DIHYDROXIDE (GAS)

79.994

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	79.297	307.215	307.215	-607.517	0.000	-699.113	-607.517	-568.304	99.564
	300.00	79.428	307.706	307.217	-607.370	0.147	-699.682	-607.582	-568.060	98.908
	400.00	86.872	331.583	310.421	-599.052	8.465	-731.686	-616.384	-553.943	72.337
	500.00	93.121	351.667	316.714	-590.040	17.477	-765.874	-619.556	-537.950	56.199
	600.00	98.036	369.097	324.023	-580.473	27.044	-801.931	-622.110	-521.380	45.390
	700.00	101.995	384.517	331.585	-570.465	37.052	-839.626	-624.198	-504.422	37.640
	800.00	105.268	398.356	339.081	-560.097	47.420	-878.782	-625.938	-487.188	31.810
	900.00	108.026	410.919	346.376	-549.428	58.089	-919.255	-627.424	-469.753	27.264
	1000.00	110.371	422.425	353.413	-538.505	69.012	-960.930	-628.741	-452.163	23.619
	1100.00	112.482	433.046	360.176	-527.360	80.157	-1003.711	-629.961	-434.445	20.630
	1200.00	114.332	442.914	366.665	-516.017	91.500	-1047.515	-824.667	-411.737	17.922
	1300.00	115.975	452.132	372.888	-504.501	103.016	-1092.272	-824.011	-377.352	15.162
	1400.00	117.445	460.781	378.861	-492.828	114.689	-1137.922	-823.274	-343.021	12.798
	1500.00	118.766	468.930	384.596	-481.016	126.501	-1184.411	-822.469	-308.745	10.751
	1600.00	119.954	476.634	390.110	-469.079	138.438	-1231.693	-821.607	-274.524	8.962
	1700.00	121.022	483.938	395.416	-457.030	150.487	-1279.725	-820.700	-240.359	7.385
	1800.00	121.978	490.883	400.529	-444.879	162.638	-1328.469	-819.757	-206.249	5.985
	1900.00	122.828	497.502	405.460	-432.638	174.879	-1377.891	-818.787	-172.191	4.734
	2000.00	123.577	503.821	410.221	-420.317	187.200	-1427.959	-817.799	-138.185	3.609

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
SOL	298.15	111.909	113.763	113.763	–1561.511	0.000	–1595.429	–1561.511	–1467.389	257.080
	300.00	112.256	114.456	113.765	–1561.304	0.207	–1595.641	–1561.526	–1466.805	255.393
	400.00	127.771	149.017	118.372	–1549.253	12.258	–1608.860	–1567.298	–1434.728	187.356
	500.00	138.733	178.768	127.546	–1535.900	25.611	–1625.284	–1567.015	–1401.597	146.424
	600.00	147.111	204.832	138.300	–1521.592	39.919	–1644.491	–1565.854	–1368.610	119.148
	700.00	153.934	228.037	149.492	–1506.529	54.982	–1666.155	–1564.027	–1335.872	99.684
	800.00	159.744	248.981	160.640	–1490.838	70.673	–1690.023	–1561.668	–1303.434	85.106
	900.00	164.847	268.097	171.533	–1474.604	86.907	–1715.891	–1558.877	–1271.318	73.785
	1000.00	169.433	285.706	182.081	–1457.886	103.625	–1743.592	–1555.737	–1239.533	64.747
	1100.00	173.631	302.054	192.254	–1440.730	120.781	–1772.990	–1552.316	–1208.076	57.367
	1200.00	177.535	317.332	202.047	–1423.170	138.341	–1803.967	–1742.200	–1172.059	51.018
	1300.00	181.219	331.689	211.473	–1405.230	156.281	–1836.426	–1736.535	–1124.775	45.194
	1362.00	183.419	340.183	217.140	–1393.926	167.585	–1857.255	–1732.885	–1095.684	42.021
LIQ			38.031		51.798					
	1362.00	177.318	378.214	217.140	–1342.128	219.383	–1857.255	–1681.087	–1095.684	42.021
	1400.00	177.318	383.093	221.578	–1335.390	226.121	–1871.720	–1679.056	–1079.379	40.272
	1500.00	177.318	395.327	232.758	–1317.658	243.853	–1910.648	–1673.768	–1036.730	36.102
	1600.00	177.318	406.770	243.280	–1299.927	261.584	–1950.759	–1668.559	–994.431	32.465
	1700.00	177.318	417.520	253.217	–1282.195	279.316	–1991.979	–1713.607	–952.009	29.252
	1800.00	177.318	427.656	262.629	–1264.463	297.048	–2034.243	–1708.326	–907.362	26.331
	1900.00	177.318	437.243	271.569	–1246.731	314.780	–2077.492	–1703.082	–863.007	23.726
	2000.00	177.318	446.338	280.082	–1228.999	332.512	–2121.675	–1697.874	–818.927	21.388

References

Phase	H / S	C _p
SOL	Ja1	Ja1
LIQ	Ja1	Ja1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		[-]
SOL-A	298.15	157.039	164.055	164.055	-2470.066	0.000	-2518.979	-2470.066	-2324.163	407.184
	300.00	157.468	165.027	164.058	-2469.775	0.291	-2519.283	-2470.089	-2323.257	404.515
	400.00	183.200	213.864	170.541	-2452.737	17.329	-2538.282	-2475.966	-2273.773	296.924
	500.00	203.534	257.061	183.610	-2433.340	36.726	-2561.871	-2474.978	-2223.303	232.267
	600.00	217.667	295.497	199.116	-2412.237	57.829	-2589.536	-2472.559	-2173.176	189.192
	700.00	227.646	329.842	215.383	-2389.944	80.122	-2620.834	-2469.204	-2123.533	158.460
	800.00	234.956	360.741	231.654	-2366.797	103.269	-2655.389	-2465.234	-2074.417	135.446
	900.00	240.518	388.750	247.578	-2343.011	127.055	-2692.886	-2460.859	-2025.824	117.576
	951.00	242.875	402.073	255.508	-2330.683	139.383	-2713.054	-2458.522	-2001.237	109.920
SOL-B			0.440		0.418					
	951.00	292.880	402.512	255.508	-2330.265	139.801	-2713.054	-2458.104	-2001.237	109.920
	980.00	292.880	411.310	259.989	-2321.772	148.294	-2724.856	-2455.319	-1987.347	105.927
SOL-C			0.641		0.628					
	980.00	292.880	411.951	259.989	-2321.144	148.922	-2724.856	-2454.691	-1987.347	105.927
	1000.00	292.880	417.868	263.088	-2315.286	154.780	-2733.154	-2452.783	-1977.829	103.311
	1100.00	292.880	445.782	278.448	-2285.998	184.068	-2776.359	-2443.395	-1930.790	91.686
	1147.00	292.880	458.036	285.557	-2272.233	197.833	-2797.600	-2439.075	-1908.979	86.935
LIQ			31.006		35.564					
	1147.00	261.207	489.042	285.557	-2236.669	233.397	-2797.600	-2403.511	-1908.979	86.935
	1200.00	261.207	500.841	294.807	-2222.825	247.241	-2823.835	-2593.914	-1881.318	81.892
	1300.00	261.207	521.749	311.471	-2196.704	273.362	-2874.978	-2586.392	-1822.241	73.219
	1400.00	261.207	541.107	327.191	-2170.584	299.482	-2928.133	-2579.029	-1763.737	65.806
	1500.00	261.207	559.128	342.059	-2144.463	325.603	-2983.155	-2571.818	-1705.755	59.400
	1600.00	261.207	575.986	356.159	-2118.342	351.724	-3039.920	-2564.754	-1648.248	53.810
	1700.00	261.207	591.821	369.560	-2092.221	377.845	-3098.318	-2658.187	-1590.286	48.864
	1800.00	261.207	606.752	382.327	-2066.101	403.965	-3158.254	-2650.954	-1527.677	44.332
	1900.00	261.207	620.874	394.513	-2039.980	430.086	-3219.641	-2643.780	-1465.469	40.289
	2000.00	261.207	634.273	406.169	-2013.859	456.207	-3282.405	-2636.665	-1403.637	36.659

References

Phase	H / S	C _p
SOL-A	Ja1	Ja1
SOL-B	Ja1	Ja1
SOL-C	Ja1	Ja1
LIQ	Ja1	Ja1,S5

184.042

SODIUM ORTHOSILICATE

Na₄SiO₄

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	184.720	195.640	195.640	-2106.644	0.000	-2164.974	-2106.644	-1975.669	346.129
	300.00	184.857	196.783	195.643	-2106.302	0.342	-2165.337	-2106.656	-1974.856	343.853
	400.00	192.280	250.979	202.983	-2087.445	19.199	-2187.837	-2118.349	-1929.951	252.026
	500.00	199.702	294.683	217.087	-2067.846	38.798	-2215.188	-2119.553	-1882.695	196.684
	600.00	207.125	331.749	233.184	-2047.505	59.139	-2246.554	-2119.971	-1835.272	159.775
	700.00	214.547	364.235	249.631	-2026.421	80.223	-2281.386	-2119.654	-1787.837	133.410
	800.00	221.970	393.368	265.807	-2004.595	102.049	-2319.290	-2118.647	-1740.495	113.643
	900.00	229.392	419.941	281.478	-1982.027	124.617	-2359.974	-2117.000	-1693.319	98.278
	1000.00	236.814	444.494	296.567	-1958.717	147.927	-2403.211	-2114.772	-1646.357	85.997
	1100.00	244.237	467.413	311.068	-1934.664	171.980	-2448.819	-2112.027	-1599.645	75.961
	1200.00	251.659	488.982	325.004	-1909.870	196.774	-2496.649	-2495.873	-1543.439	67.184
	1300.00	259.082	509.419	338.410	-1884.333	222.311	-2546.577	-2488.558	-1464.362	58.839
	1393.00	265.984	527.556	350.437	-1859.917	246.727	-2594.803	-2481.182	-1391.347	52.173
			41.449			57.739				
LIQ	1393.00	259.408	569.005	350.437	-1802.178	304.466	-2594.803	-2423.443	-1391.347	52.173
	1400.00	259.408	570.306	351.533	-1800.362	306.282	-2598.790	-2422.913	-1386.162	51.718
	1500.00	259.408	588.203	366.721	-1774.421	332.223	-2656.726	-2415.393	-1312.372	45.701
	1600.00	259.408	604.945	381.093	-1748.481	358.163	-2716.392	-2407.967	-1239.080	40.452
	1700.00	259.408	620.671	394.728	-1722.540	384.104	-2777.681	-2450.809	-1165.802	35.821
	1800.00	259.408	635.499	407.696	-1696.599	410.045	-2840.497	-2443.336	-1090.430	31.643
	1900.00	259.408	649.524	420.058	-1670.658	435.986	-2904.754	-2435.911	-1015.471	27.917
	2000.00	259.408	662.830	431.867	-1644.717	461.927	-2970.378	-2428.536	-940.902	24.574

References

Phase	H / S	C _p
SOL	S5	S5
LIQ	S5	S5

306.105

HEXASODIUM DISILICON HEPTAOXIDE

Na₆Si₂O₇

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	306.206	309.616	309.616	-3632.001	0.000	-3724.313	-3632.001	-3406.967	596.886
	300.00	306.771	311.512	309.622	-3631.434	0.567	-3724.888	-3632.011	-3405.571	592.963
	400.00	331.394	403.363	321.979	-3599.447	32.554	-3760.792	-3648.396	-3328.774	434.693
	500.00	350.117	479.386	346.071	-3565.344	66.657	-3805.036	-3648.165	-3248.857	339.406
	600.00	366.518	544.692	373.856	-3529.499	102.502	-3856.315	-3646.229	-3169.151	275.899
	700.00	381.823	602.351	402.457	-3492.076	139.925	-3913.721	-3642.806	-3089.889	230.570
	800.00	396.544	654.302	430.743	-3453.154	178.847	-3976.595	-3638.035	-3011.211	196.612
	893.00	409.926	698.636	456.363	-3415.651	216.350	-4039.533	-3632.484	-2938.644	171.891

References

Phase	H / S	C _p	Remarks
SOL	Nb1/Tk1	e	Tk1 DPT= 893.

Na2TiO3

DISODIUM TITANIUM TRIOXIDE

141.858

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL-A	298.15	125.609	121.587	121.587	-1551.636	0.000	-1587.887	-1551.636	-1456.287	255.135
	300.00	125.770	122.364	121.589	-1551.403	0.233	-1588.113	-1551.636	-1455.695	253.459
	400.00	134.443	159.734	126.626	-1538.393	13.243	-1602.286	-1556.913	-1423.304	185.864
	500.00	143.116	190.666	136.424	-1524.515	27.121	-1619.848	-1556.527	-1389.929	145.205
	560.00	148.320	207.174	143.131	-1515.772	35.864	-1631.789	-1555.908	-1369.970	127.786
			2.989		1.674					
SOL-B	560.00	148.278	210.163	143.131	-1514.098	37.538	-1631.789	-1554.234	-1369.970	127.786
	600.00	149.775	220.445	147.946	-1508.137	43.499	-1640.404	-1553.705	-1356.826	118.122
	700.00	153.515	243.813	160.008	-1492.972	58.664	-1663.642	-1552.199	-1324.129	98.808
	800.00	157.256	264.557	171.804	-1477.434	74.202	-1689.079	-1550.455	-1291.664	84.337
	900.00	160.996	283.295	183.167	-1461.521	90.115	-1716.486	-1548.506	-1259.430	73.095
	1000.00	164.737	300.451	194.049	-1445.235	106.401	-1745.685	-1546.381	-1227.423	64.114
	1100.00	168.477	316.327	204.453	-1428.574	123.062	-1776.534	-1544.107	-1195.636	56.776
	1200.00	172.218	331.147	214.400	-1411.539	140.097	-1808.916	-1739.228	-1159.061	50.453
	1238.00	173.639	336.538	218.066	-1404.968	146.668	-1821.602	-1737.402	-1140.718	48.130

References

Phase	H / S	C _p	Remarks
SOL-A	Tk1	Tk1,e	
SOL-B	Tk1	e	Tk1 DPT= 1238. (LIQ + Na8Ti5O14)

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	174.390	173.803	173.803	–2539.688	0.000	–2591.507	–2539.688	–2389.572	418.643
	300.00	174.711	174.883	173.807	–2539.365	0.323	–2591.830	–2539.698	–2388.640	415.899
	400.00	187.021	227.023	180.832	–2521.212	18.476	–2612.021	–2545.393	–2337.809	305.287
	500.00	194.305	269.592	194.458	–2502.121	37.567	–2636.917	–2545.554	–2285.885	238.805
	600.00	199.611	305.506	210.051	–2482.415	57.273	–2665.719	–2545.348	–2233.966	194.484
	700.00	203.983	336.613	225.958	–2462.230	77.458	–2697.859	–2544.948	–2182.099	162.830
	800.00	207.858	364.108	241.542	–2441.635	98.053	–2732.921	–2544.456	–2130.296	139.094
	900.00	211.443	388.800	256.555	–2420.668	119.020	–2770.587	–2543.938	–2078.557	120.636
	1000.00	214.848	411.255	270.919	–2399.352	140.336	–2810.607	–2543.441	–2026.875	105.873
	1100.00	218.136	431.887	284.627	–2377.702	161.986	–2852.778	–2542.991	–1975.241	93.796
	1200.00	221.344	451.006	297.705	–2355.727	183.961	–2896.934	–2744.134	–1918.525	83.511
	1258.00	223.178	461.496	305.016	–2342.836	196.852	–2923.398	–2742.289	–1878.664	78.006
			87.272		109.788					
LIQ	1258.00	252.295	548.768	305.016	–2233.048	306.640	–2923.398	–2632.501	–1878.664	78.006
	1300.00	252.295	557.054	313.026	–2222.452	317.236	–2946.622	–2629.946	–1853.538	74.476
	1400.00	252.295	575.751	331.132	–2197.222	342.466	–3003.273	–2624.005	–1794.039	66.936
	1500.00	252.295	593.158	348.027	–2171.993	367.695	–3061.729	–2618.272	–1734.957	60.417
	1600.00	252.295	609.440	363.862	–2146.763	392.925	–3121.867	–2612.756	–1676.250	54.724
	1700.00	252.295	624.736	378.762	–2121.534	418.154	–3183.584	–2607.469	–1617.882	49.711
	1800.00	252.295	639.156	392.832	–2096.304	443.384	–3246.785	–2602.423	–1559.818	45.265
	1900.00	252.295	652.797	406.159	–2071.074	468.614	–3311.389	–2597.626	–1502.027	41.294
	2000.00	252.295	665.738	418.817	–2045.845	493.843	–3377.322	–2621.346	–1443.593	37.703

References

Phase	H / S	C _p
SOL	e/Tk1	Tk1,e
LIQ	Tk1	e

Na2Ti3O7

DISODIUM TRITITANIUM HEPTAOXIDE

301.615

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	229.487	233.927	233.927	-3479.958	0.000	-3549.703	-3479.958	-3277.432	574.193
	300.00	229.895	235.348	233.932	-3479.533	0.425	-3550.138	-3479.967	-3276.176	570.433
	400.00	245.818	303.902	243.171	-3455.665	24.293	-3577.226	-3485.507	-3207.786	418.894
	500.00	255.580	359.869	261.086	-3430.566	49.392	-3610.501	-3485.419	-3138.355	327.862
	600.00	262.916	407.139	281.590	-3404.628	75.330	-3648.912	-3484.926	-3068.984	267.179
	700.00	269.106	448.143	302.518	-3378.020	101.938	-3691.721	-3484.231	-2999.713	223.841
	800.00	274.687	484.447	323.033	-3350.827	129.131	-3738.384	-3483.448	-2930.549	191.345
	900.00	279.913	517.105	342.812	-3323.095	156.863	-3788.489	-3482.651	-2861.485	166.076
	1000.00	284.918	546.857	361.751	-3294.852	185.106	-3841.709	-3481.882	-2792.508	145.866
	1100.00	289.779	574.241	379.840	-3266.116	213.842	-3897.781	-3481.162	-2723.606	129.333
	1200.00	294.542	599.660	397.111	-3236.899	243.059	-3956.492	-3686.022	-2649.528	115.331
	1300.00	299.237	623.422	413.616	-3207.210	272.748	-4017.658	-3681.991	-2563.316	102.995
	1400.00	303.881	645.768	429.408	-3177.053	302.905	-4081.129	-3677.786	-2477.420	92.434
	1401.00	303.927	645.985	429.562	-3176.750	303.208	-4081.775	-3677.743	-2476.563	92.336

References

Phase	H / S	C _p	Remarks
SOL	Tk1	e	Tk1 DPT= 1401. (LIQ + Na2Ti6O13), L= 155,2 kJ

Na3PO4

SODIUM PHOSPHATE

163.941

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	150.038	173.799	173.799	-1917.402	0.000	-1969.220	-1917.402	-1788.622	313.359
	300.00	150.577	174.729	173.802	-1917.124	0.278	-1969.543	-1917.433	-1787.823	311.288
	400.00	176.039	221.675	180.031	-1900.744	16.658	-1989.414	-1927.111	-1743.629	227.695
	500.00	197.840	263.338	192.600	-1882.033	35.369	-2013.702	-1926.454	-1697.788	177.367
	600.00	218.202	301.222	207.591	-1861.223	56.179	-2041.957	-1923.645	-1652.285	143.844
	700.00	237.883	336.342	223.504	-1838.415	78.987	-2073.855	-1918.834	-1607.411	119.946
	800.00	257.201	369.371	239.692	-1813.658	103.744	-2109.156	-1912.111	-1563.359	102.077
	900.00	276.309	400.770	255.859	-1786.982	130.420	-2147.675	-1903.540	-1520.260	88.234

References

Phase	H / S	C _p
SOL	Nb1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S —(G-H298)/T	—(G-H298)/T	H [————— kJ / mol —————]	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [— —]
SOL-1	298.15	82.811	96.232	96.232	-366.100	0.000	-394.792	-366.100	-354.551	62.116
	300.00	82.836	96.744	96.234	-365.947	0.153	-394.970	-366.093	-354.480	61.720
	400.00	84.294	120.771	99.500	-357.591	8.509	-405.900	-373.562	-350.130	45.722
	500.00	85.791	139.742	105.716	-349.087	17.013	-418.958	-375.162	-344.102	35.948
	600.00	87.255	155.513	112.737	-340.434	25.666	-433.742	-376.118	-337.787	29.407
	700.00	88.684	169.072	119.839	-331.637	34.463	-449.987	-376.534	-331.361	24.726
	800.00	90.082	181.005	126.754	-322.699	43.401	-467.503	-376.774	-324.891	21.213
	900.00	91.454	191.695	133.386	-313.622	52.478	-486.147	-429.678	-317.244	18.412
	1000.00	92.800	201.400	139.709	-304.409	61.691	-505.809	-428.075	-304.837	15.923
	1100.00	110.597	210.791	145.738	-294.542	71.558	-526.412	-425.867	-292.605	13.895
	1200.00	159.305	222.312	151.617	-281.265	84.835	-548.040	-613.860	-275.817	12.006
	1276.00	211.998	233.635	156.152	-267.232	98.868	-565.350	-604.395	-254.680	10.426
			0.000		0.000					
SOL-2	1276.00	211.919	233.635	156.152	-267.232	98.868	-565.350	-604.395	-254.680	10.426
	1300.00	187.652	237.359	157.618	-262.437	103.663	-571.003	-601.043	-248.135	9.970
	1400.00	137.154	249.066	163.759	-246.671	119.429	-595.363	-591.294	-221.386	8.260
	1445.00	133.888	253.322	166.482	-240.617	125.483	-606.667	-587.949	-209.550	7.575
LIQ			13.319		19.246					
	1445.00	92.048	266.641	166.482	-221.371	144.729	-606.667	-568.703	-209.550	7.575
	1500.00	92.048	270.079	170.218	-216.308	149.792	-621.428	-566.952	-195.913	6.822
	1600.00	92.048	276.020	176.647	-207.104	158.996	-648.736	-563.773	-171.280	5.592
	1700.00	92.048	281.600	182.659	-197.899	168.201	-676.620	-560.599	-146.847	4.512
	1800.00	92.048	286.862	188.303	-188.694	177.406	-705.045	-557.429	-122.600	3.558
	1900.00	92.048	291.839	193.622	-179.489	186.611	-733.982	-554.263	-98.529	2.709
	2000.00	92.048	296.560	198.652	-170.284	195.816	-763.404	-551.103	-74.625	1.949

References

Phase	H / S	C _p
SOL-1	Ja1	Ja1
SOL-2	Ja1	Ja1
LIQ	Ja1	Ja1

Na2S2

DISODIUM DISULFIDE

110.112

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	98.623	117.152	117.152	-393.296	0.000	-428.225	-393.296	-378.427	66.299
	300.00	98.726	117.762	117.154	-393.113	0.183	-428.442	-393.302	-378.335	65.874
	400.00	104.299	146.927	121.093	-382.962	10.334	-441.733	-403.556	-372.685	48.668
	500.00	109.872	170.800	128.715	-372.254	21.042	-457.653	-406.854	-364.617	38.091
	600.00	115.445	191.324	137.477	-360.988	32.308	-475.782	-408.773	-355.961	30.989
	700.00	121.018	209.539	146.494	-349.165	44.131	-495.842	-409.473	-347.092	25.900
	748.00	123.693	217.653	150.802	-343.292	50.004	-506.096	-409.587	-342.810	23.939

References

Phase	H / S	C _p	Remarks
SOL	Tk1	e	Tk1 DPT= 748. (LIQ + Na2S)

Na2S3

DISODIUM TRISULFIDE

142.178

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	125.335	101.671	101.671	-432.626	0.000	-462.939	-432.626	-403.584	70.706
	300.00	125.436	102.447	101.674	-432.394	0.232	-463.128	-432.625	-403.404	70.239
	400.00	130.917	139.283	106.659	-419.576	13.050	-475.290	-444.793	-392.965	51.316
	500.00	136.398	169.085	116.255	-406.211	26.415	-490.753	-449.337	-379.535	39.650
	600.00	141.879	194.438	127.223	-392.297	40.329	-508.960	-452.183	-365.271	31.800
	626.00	143.305	200.487	130.141	-388.589	44.037	-514.094	-452.631	-361.495	30.164
			31.414		19.665					
LIQ	626.00	155.645	231.901	130.141	-368.924	63.702	-514.094	-432.966	-361.495	30.164
	700.00	155.645	249.291	141.834	-357.407	75.219	-531.910	-433.126	-353.036	26.344
	800.00	155.645	270.074	156.594	-341.842	90.784	-557.902	-433.459	-341.577	22.303
	900.00	155.645	288.407	170.242	-326.278	106.348	-585.844	-592.289	-326.605	18.956
	1000.00	155.645	304.805	182.893	-310.713	121.913	-615.519	-588.004	-297.314	15.530

References

Phase	H / S	C _p
SOL	Mi1	e
LIQ	Mi1	e

Phase	T [K]	C _p [————— J / (K mol)]	S [————— J / (K mol)]	–(G–H298)/T [————— J / (K mol)]	H [————— kJ / mol]	H–H298 [————— kJ / mol]	G [————— kJ / mol]	ΔH _f [————— kJ / mol]	ΔG _f [————— kJ / mol]	log K _f [—]
SOL	298.15	152.156	167.360	167.360	–411.287	0.000	–461.185	–411.287	–392.273	68.725
	300.00	152.256	168.302	167.363	–411.005	0.282	–461.496	–411.278	–392.155	68.280
	400.00	157.653	212.842	173.399	–395.510	15.777	–480.647	–425.350	–385.044	50.282
	500.00	163.050	248.601	184.977	–379.475	31.812	–503.775	–431.127	–374.376	39.111
	573.00	166.991	271.084	194.541	–367.428	43.859	–522.759	–434.119	–365.863	33.352
LIQ			29.208		16.736					
	573.00	187.443	300.291	194.541	–350.692	60.595	–522.759	–417.383	–365.863	33.352
	600.00	187.443	308.922	199.496	–345.631	65.656	–530.984	–417.619	–363.429	31.639
	700.00	187.443	337.816	217.245	–326.887	84.400	–563.358	–418.017	–354.361	26.443
	800.00	187.443	362.846	233.916	–308.143	103.144	–598.419	–418.531	–345.238	22.542
	900.00	187.443	384.924	249.492	–289.398	121.889	–635.830	–630.387	–331.422	19.235
	1000.00	187.443	404.673	264.040	–270.654	140.633	–675.327	–624.758	–298.506	15.592

References

Phase	H / S	C _p
SOL	Tk1	e
LIQ	Mi1,e	e

Na2SO3

SODIUM SULFITE

126.044

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f kJ / mol	ΔG _f kJ / mol	log K _f [-]
SOL	298.15	120.247	145.938	145.938	-1100.802	0.000	-1144.313	-1100.802	-1012.326	177.355
	300.00	120.328	146.682	145.940	-1100.579	0.223	-1144.584	-1100.807	-1011.777	176.166
	400.00	124.679	181.894	150.712	-1088.329	12.473	-1161.087	-1108.838	-981.532	128.175
	500.00	129.030	210.183	159.866	-1075.644	25.158	-1180.735	-1110.845	-949.486	99.192
	600.00	133.382	234.092	170.294	-1062.523	38.279	-1202.979	-1112.072	-917.084	79.839
	700.00	137.733	254.980	180.931	-1048.967	51.835	-1227.453	-1112.612	-884.536	66.005
	800.00	142.084	273.656	191.374	-1034.976	65.826	-1253.901	-1112.805	-851.938	55.626
	900.00	146.436	290.642	201.474	-1020.550	80.252	-1282.128	-1165.468	-818.180	47.486
	1000.00	150.787	306.296	211.183	-1005.689	95.113	-1311.985	-1163.409	-779.700	40.727
	1100.00	155.139	320.872	220.500	-990.393	110.409	-1343.352	-1161.036	-741.442	35.208
	1184.00	158.794	332.421	228.034	-977.208	123.594	-1370.794	-1352.628	-707.247	31.202
LIQ			21.839		25.857					
	1184.00	182.004	354.259	228.034	-951.351	149.451	-1370.794	-1326.771	-707.247	31.202
	1200.00	182.004	356.703	229.733	-948.439	152.363	-1376.482	-1325.675	-698.882	30.422
	1300.00	182.004	371.271	240.068	-930.238	170.564	-1412.890	-1318.861	-646.926	25.994
	1400.00	182.004	384.759	249.927	-912.038	188.764	-1450.700	-1312.097	-595.493	22.218
	1500.00	182.004	397.316	259.339	-893.838	206.964	-1489.811	-1305.379	-544.542	18.963
	1600.00	182.004	409.062	268.334	-875.637	225.165	-1530.136	-1298.705	-494.037	16.129
	1700.00	182.004	420.096	276.940	-857.437	243.365	-1571.600	-1292.073	-443.949	13.641
	1800.00	182.004	430.499	285.185	-839.236	261.566	-1614.134	-1285.481	-394.250	11.441
	1900.00	182.004	440.339	293.094	-821.036	279.766	-1657.681	-1278.929	-344.916	9.482
	2000.00	182.004	449.675	300.692	-802.836	297.966	-1702.185	-1272.417	-295.926	7.729

References

Phase	H / S	C _p
SOL	Nb1	e
LIQ	Tk1	e

142.043

SODIUM SULFATE

Na₂SO₄

Phase	T [K]	C _p [————— J / (K mol) —————]	S —(G-H298)/T	—(G-H298)/T	H [————— kJ / mol —————]	H-H298	G	ΔH _f	ΔG _f	log K _f [—]
SOL-5	298.15	128.151	149.595	149.595	-1387.816	0.000	-1432.418	-1387.816	-1269.848	222.472
	300.00	128.487	150.388	149.597	-1387.579	0.237	-1432.695	-1387.834	-1269.116	220.973
	400.00	145.101	189.701	154.845	-1373.874	13.942	-1449.754	-1395.895	-1228.938	160.483
	458.00	153.331	209.904	160.555	-1365.214	22.602	-1461.350	-1396.568	-1204.690	137.394
			0.557		0.255					
SOL-4	458.00	153.333	210.461	160.555	-1364.959	22.857	-1461.350	-1396.313	-1204.690	137.394
	500.00	158.909	224.157	165.327	-1358.401	29.415	-1470.480	-1396.645	-1187.100	124.015
	514.00	160.711	228.570	166.990	-1356.164	31.652	-1473.649	-1396.669	-1181.232	120.041
			21.222		10.908					
SOL-1	514.00	170.732	249.792	166.990	-1345.256	42.560	-1473.649	-1385.761	-1181.232	120.041
	600.00	175.331	276.547	180.817	-1330.378	57.438	-1496.306	-1384.549	-1147.098	99.864
	700.00	181.042	304.000	196.493	-1312.562	75.254	-1525.361	-1382.456	-1107.680	82.656
	800.00	187.276	328.570	211.493	-1294.154	93.662	-1557.010	-1379.900	-1068.597	69.772
	900.00	193.845	351.008	225.765	-1275.098	112.718	-1591.005	-1429.636	-1028.708	59.705
	1000.00	200.309	371.767	239.340	-1255.389	132.427	-1627.156	-1424.461	-984.433	51.422
	1100.00	206.731	391.159	252.269	-1235.037	152.779	-1665.312	-1418.786	-940.701	44.670
	1157.00	210.367	401.695	259.373	-1223.150	164.666	-1687.910	-1415.339	-916.015	41.355
			20.613		23.849					
LIQ	1157.00	197.033	422.307	259.373	-1199.301	188.515	-1687.910	-1391.490	-916.015	41.355
	1200.00	197.033	429.497	265.341	-1190.828	196.988	-1706.225	-1582.945	-893.500	38.893
	1300.00	197.033	445.268	278.583	-1171.125	216.691	-1749.974	-1576.419	-836.312	33.603
	1400.00	197.033	459.870	291.017	-1151.422	236.394	-1795.240	-1569.959	-779.623	29.088
	1500.00	197.033	473.464	302.732	-1131.718	256.098	-1841.914	-1563.559	-723.394	25.191
	1600.00	197.033	486.180	313.805	-1112.015	275.801	-1889.903	-1557.216	-667.590	21.795
	1700.00	197.033	498.125	324.299	-1092.312	295.504	-1939.125	-1550.926	-612.182	18.810
	1800.00	197.033	509.387	334.272	-1072.608	315.208	-1989.506	-1544.690	-557.142	16.168
	1900.00	197.033	520.040	343.772	-1052.905	334.911	-2040.982	-1538.505	-502.447	13.813
	2000.00	197.033	530.147	352.840	-1033.202	354.614	-2093.496	-1532.371	-448.076	11.703

References

Phase	H / S	C _p	Remarks
SOL-5	Ja1	Ja1	
SOL-4	Ja1	Ja2	Ja1
SOL-1	Ja1	Ja2	TPT(SOL-4 - SOL-1)= 514., L= 10.91 kJ
LIQ	Ja1	Ja1	

Na2SO4[III]

SODIUM SULFATE (III)

142.043

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL-3	298.15	129.168	154.908	154.908	-1384.854	0.000	-1431.040	-1384.854	-1268.471	222.231
	300.00	129.570	155.709	154.911	-1384.615	0.239	-1431.327	-1384.870	-1267.748	220.735
	400.00	150.143	195.809	160.241	-1370.627	14.227	-1448.950	-1392.648	-1228.134	160.378
	500.00	173.167	231.709	170.992	-1354.496	30.358	-1470.350	-1392.739	-1186.970	124.002
	509.00	175.450	234.819	172.094	-1352.927	31.927	-1472.450	-1392.626	-1183.268	121.429

References

Phase	H / S	C _p	Remarks
SOL-3	Ja1	Ja2	Ja2 TPT(SOL-3 - SOL-1)= 509., L= 6.887 +/- 0.084 kJ

NaTe

SODIUM TELLURIDE

150.590

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	52.225	80.333	80.333	-175.730	0.000	-199.681	-175.730	-169.582	29.710
	300.00	52.258	80.656	80.334	-175.633	0.097	-199.830	-175.733	-169.544	29.520
	400.00	54.057	95.936	82.405	-170.318	5.412	-208.692	-178.724	-167.232	21.838
	500.00	55.856	108.192	86.376	-164.822	10.908	-218.918	-179.236	-164.299	17.164
	600.00	57.656	118.535	90.895	-159.146	16.584	-230.267	-179.703	-161.267	14.040
	633.00	58.249	121.637	92.418	-157.234	18.496	-234.230	-179.852	-160.249	13.224

References

Phase	H / S	C _p	Remarks
SOL	Tk1	e	Tk1 DPT= 633. (LIQ + Na2Te)

Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	100.309	134.725	134.725	–125.520	0.000	–165.688	–125.520	–106.075	18.584
	300.00	100.401	135.346	134.727	–125.334	0.186	–165.938	–125.529	–105.954	18.448
	400.00	105.378	164.911	138.724	–115.045	10.475	–181.010	–128.917	–99.123	12.944
	500.00	110.354	188.960	146.437	–104.259	21.261	–198.739	–129.951	–91.556	9.565
	600.00	115.330	209.519	155.277	–92.975	32.545	–218.686	–131.064	–83.774	7.293
	700.00	120.307	227.671	164.347	–81.193	44.327	–240.563	–132.278	–75.798	5.656
	728.00	121.700	232.417	166.874	–77.805	47.715	–247.004	–185.147	–73.143	5.248
LIQ			40.231		29.288					
	728.00	122.000	272.648	166.874	–48.517	77.003	–247.004	–155.859	–73.143	5.248
	800.00	122.000	284.154	176.920	–39.733	85.787	–267.056	–157.300	–64.893	4.237
	900.00	122.000	298.523	189.648	–27.533	97.987	–296.204	–159.284	–53.223	3.089
	1000.00	122.000	311.377	201.190	–15.333	110.187	–326.710	–161.268	–41.333	2.159
	1100.00	122.000	323.005	211.744	–3.133	122.387	–358.438	–163.273	–29.242	1.389
	1200.00	122.000	333.620	221.464	9.067	134.587	–391.277	–262.081	–14.527	0.632
	1300.00	122.000	343.386	230.472	21.267	146.787	–425.134	–263.256	6.150	–0.247
	1400.00	122.000	352.427	238.864	33.467	158.987	–459.930	–403.750	34.392	–1.283
	1500.00	122.000	360.844	246.719	45.667	171.187	–495.599	–400.203	65.564	–2.283

References

Phase	H / S	C _p
SOL	Tk1	e
LIQ	Tk1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	77.337	115.060	115.060	-313.800	0.000	-348.105	-313.800	-302.665	53.026
	300.00	77.362	115.538	115.061	-313.657	0.143	-348.318	-313.809	-302.596	52.687
	400.00	78.743	137.983	118.112	-305.852	7.948	-361.045	-319.931	-298.339	38.959
	500.00	80.124	155.703	123.919	-297.908	15.892	-375.760	-321.097	-292.803	30.589
	600.00	81.504	170.433	130.478	-289.827	23.973	-392.087	-322.175	-287.042	24.989
	700.00	82.885	183.100	137.111	-281.607	32.193	-409.778	-323.208	-281.105	20.976
	800.00	84.266	194.258	143.571	-273.250	40.550	-428.657	-341.859	-273.140	17.834
	900.00	85.646	204.263	149.768	-264.754	49.046	-448.591	-342.904	-264.486	15.350
	1000.00	87.027	213.358	155.679	-256.121	57.679	-469.479	-343.810	-255.723	13.358
	1100.00	88.408	221.718	161.308	-247.349	66.451	-491.238	-344.621	-246.874	11.723
	1200.00	89.789	229.469	166.669	-238.439	75.361	-513.802	-538.898	-233.073	10.145
	1300.00	91.169	236.711	171.781	-229.391	84.409	-537.115	-537.773	-207.632	8.343
	1308.00	91.280	237.271	172.180	-228.661	85.139	-539.011	-537.677	-205.601	8.211
			10.556		13.807					
LIQ	1308.00	96.232	247.826	172.180	-214.854	98.946	-539.011	-523.870	-205.601	8.211
	1400.00	96.232	254.368	177.368	-206.001	107.799	-562.116	-568.745	-180.778	6.745
	1500.00	96.232	261.007	182.725	-196.378	117.422	-587.888	-565.471	-153.180	5.334

References

Phase	H / S	C _p
SOL	Tk1	e
LIQ	Tk1	e

121.929

SODIUM METAVANADATE

NaVO₃

Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H ₂₉₈)/T [—————]	H [—————]	H–H ₂₉₈ kJ / mol	G kJ / mol	ΔH _f kJ / mol	ΔG _f kJ / mol	log K _f [–]
SOL–1	298.15	97.570	113.679	113.679	–1147.650	0.000	–1181.543	–1147.650	–1065.835	186.730
	300.00	97.958	114.284	113.681	–1147.469	0.181	–1181.754	–1147.649	–1065.328	185.490
	400.00	111.716	144.626	117.725	–1136.889	10.761	–1194.740	–1149.713	–1037.746	135.516
	500.00	118.252	170.334	125.747	–1125.356	22.294	–1210.524	–1148.532	–1009.879	105.501
	600.00	121.946	192.249	135.051	–1113.331	34.319	–1228.680	–1146.984	–982.290	85.516
	666.00	123.601	205.064	141.363	–1105.226	42.424	–1241.798	–1145.866	–964.233	75.625
SOL–2			1.571		1.046					
	666.00	123.601	206.634	141.363	–1104.180	43.470	–1241.798	–1144.820	–964.233	75.625
	700.00	124.298	212.806	144.685	–1099.965	47.685	–1248.929	–1144.227	–955.029	71.265
	800.00	125.935	229.517	154.265	–1087.449	60.201	–1271.062	–1142.460	–928.121	60.600
	900.00	127.156	244.423	163.470	–1074.792	72.858	–1294.773	–1140.702	–901.434	52.318
	903.00	127.188	244.846	163.739	–1074.410	73.240	–1295.507	–1140.650	–900.637	52.098
LIQ			31.369		28.326					
	903.00	142.256	276.215	163.739	–1046.084	101.566	–1295.507	–1112.324	–900.637	52.098
	1000.00	142.256	290.730	175.365	–1032.285	115.365	–1323.015	–1109.275	–878.057	45.865
	1100.00	142.256	304.288	186.479	–1018.060	129.590	–1352.777	–1106.323	–855.080	40.604
	1200.00	142.256	316.666	196.820	–1003.834	143.816	–1383.834	–1200.342	–829.922	36.126
	1300.00	142.256	328.053	206.483	–989.609	158.041	–1416.077	–1196.897	–799.194	32.112
	1400.00	142.256	338.595	215.547	–975.383	172.267	–1449.416	–1193.620	–768.726	28.682
	1500.00	142.256	348.410	224.081	–961.157	186.493	–1483.772	–1190.516	–738.485	25.716

References

Phase	H / S	C _p
SOL–1	Nb1	e
SOL–2	Tk1	e
LIQ	Tk1	e

Na3VO4

SODIUM ORTHOVANADATE

183.908

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-C	298.15	164.849	190.000	190.000	-1763.451	0.000	-1820.099	-1763.451	-1643.126	287.869
	300.00	165.279	191.021	190.003	-1763.146	0.305	-1820.452	-1763.457	-1642.380	285.964
	400.00	181.296	241.039	196.714	-1745.721	17.730	-1842.136	-1771.405	-1601.388	209.120
	500.00	190.092	282.516	209.848	-1727.117	36.334	-1868.375	-1770.884	-1558.925	162.860
	600.00	196.045	317.728	224.968	-1707.795	55.656	-1898.432	-1769.651	-1516.640	132.035
	700.00	200.656	348.307	240.451	-1687.952	75.499	-1931.767	-1767.949	-1474.600	110.036
	800.00	204.552	375.361	255.656	-1667.687	95.764	-1967.976	-1765.919	-1432.829	93.554
	900.00	208.032	399.658	270.329	-1647.055	116.396	-2006.747	-1763.665	-1391.326	80.750
	1000.00	211.254	421.745	284.383	-1626.089	137.362	-2047.834	-1761.283	-1350.082	70.521
	1100.00	214.307	442.024	297.805	-1604.810	158.641	-2091.036	-1758.849	-1309.079	62.163
	1200.00	217.246	460.798	310.615	-1583.231	180.220	-2136.189	-2046.712	-1260.976	54.889
	1300.00	220.103	478.300	322.848	-1561.363	202.088	-2183.153	-2041.573	-1195.706	48.044
	1400.00	222.902	494.714	334.544	-1539.213	224.238	-2231.813	-2036.335	-1130.835	42.192
	1473.00	224.916	506.095	342.766	-1522.867	240.584	-2268.345	-2032.453	-1083.719	38.430

References

Phase	H / S	C _p	Remarks
SOL-C	Nb1	e	Tk1 MPT= 1473.

Na4V2O7

SODIUM PYROVANADATE

305.838

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	269.736	318.398	318.398	-2926.281	0.000	-3021.211	-2926.281	-2728.530	478.027
	300.00	270.555	320.069	318.403	-2925.781	0.500	-3021.802	-2926.272	-2727.303	474.866
	400.00	300.330	402.535	329.445	-2897.045	29.236	-3058.059	-2935.553	-2660.316	347.402
	500.00	315.662	471.353	351.144	-2866.176	60.105	-3101.853	-2933.118	-2591.759	270.759
	600.00	325.309	529.814	376.174	-2834.097	92.184	-3151.985	-2929.607	-2523.803	219.717
	700.00	332.273	580.508	401.824	-2801.202	125.079	-3207.558	-2925.462	-2456.490	183.306
	800.00	337.805	625.249	427.010	-2767.689	158.592	-3267.889	-2920.932	-2389.800	156.038
	900.00	342.506	665.315	451.301	-2733.669	192.612	-3332.452	-2916.189	-2323.692	134.864
	933.00	343.933	677.674	459.090	-2722.342	203.939	-3354.612	-2914.605	-2301.996	128.879
			71.078		66.316					
LIQ	933.00	372.376	748.753	459.090	-2656.026	270.255	-3354.612	-2848.289	-2301.996	128.879
	1000.00	372.376	774.577	479.373	-2631.077	295.204	-3405.654	-2843.260	-2262.943	118.204
	1100.00	372.376	810.068	507.848	-2593.839	332.442	-3484.914	-2836.141	-2205.260	104.719
	1200.00	372.376	842.469	534.403	-2556.602	369.679	-3567.565	-3216.590	-2138.440	93.084
	1300.00	372.376	872.275	559.262	-2519.364	406.917	-3653.322	-3206.862	-2048.991	82.329
	1400.00	372.376	899.871	582.618	-2482.127	444.154	-3741.946	-3197.486	-1960.278	73.139
	1500.00	372.376	925.562	604.634	-2444.889	481.392	-3833.232	-3188.468	-1872.223	65.197

References

Phase	H / S	C _p	Remarks
SOL	Nb1	e	Tk1 TPT= 697.
LIQ	Tk1	e	

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
SOL–1	298.15	139.778	160.331	160.331	–1544.733	0.000	–1592.536	–1544.733	–1429.786	250.493
	300.00	140.121	161.197	160.334	–1544.474	0.259	–1592.833	–1544.732	–1429.073	248.824
	400.00	155.325	203.715	166.028	–1529.658	15.075	–1611.144	–1549.566	–1390.156	181.536
	500.00	167.371	239.701	177.253	–1513.509	31.224	–1633.359	–1548.252	–1350.432	141.079
	600.00	178.266	271.190	190.337	–1496.221	48.512	–1658.935	–1545.874	–1311.074	114.139
	700.00	188.647	299.454	203.939	–1477.873	66.860	–1687.490	–1542.539	–1272.192	94.932
	800.00	198.763	325.307	217.516	–1458.501	86.232	–1718.746	–1538.304	–1233.850	80.562
	864.00	205.155	340.847	226.081	–1445.575	99.158	–1740.067	–1535.137	–1209.614	73.129
SOL–2			39.854		34.434					
	864.00	209.200	380.701	226.081	–1411.141	133.592	–1740.067	–1500.703	–1209.614	73.129
	900.00	209.200	389.241	232.437	–1403.610	141.123	–1753.927	–1498.687	–1197.527	69.503
	969.00	209.200	404.695	244.160	–1389.175	155.558	–1781.324	–1494.883	–1174.581	63.317
LIQ			24.560		23.799					
	969.00	209.200	429.255	244.160	–1365.376	179.357	–1781.324	–1471.084	–1174.581	63.317
	1000.00	209.200	435.843	250.001	–1358.891	185.842	–1794.734	–1469.401	–1165.122	60.860
	1100.00	209.200	455.782	267.816	–1337.971	206.762	–1839.331	–1464.095	–1134.953	53.894
	1200.00	209.200	473.984	284.249	–1317.051	227.682	–1885.832	–1652.519	–1100.376	47.898
	1300.00	209.200	490.729	299.497	–1296.131	248.602	–1934.079	–1645.792	–1054.637	42.376
	1400.00	209.200	506.233	313.717	–1275.211	269.522	–1983.937	–1639.172	–1009.413	37.662
	1500.00	209.200	520.666	327.038	–1254.291	290.442	–2035.290	–1632.654	–964.658	33.592

References

Phase	H / S	C _p
SOL–1	Ja1	Ja1
SOL–2	Ja1	Ja1
LIQ	Ja1	e

Nb

NIOBIUM

92.906

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	24.607	36.401	36.401	0.000	0.000	-10.853	0.000	0.000	0.000
	300.00	24.633	36.553	36.401	0.046	0.046	-10.920	0.000	0.000	0.000
	400.00	25.448	43.770	37.380	2.556	2.556	-14.952	0.000	0.000	0.000
	500.00	25.893	49.499	39.251	5.124	5.124	-19.625	0.000	0.000	0.000
	600.00	26.290	54.255	41.366	7.733	7.733	-24.820	0.000	0.000	0.000
	700.00	26.691	58.337	43.506	10.382	10.382	-30.454	0.000	0.000	0.000
	800.00	27.103	61.928	45.588	13.072	13.072	-36.471	0.000	0.000	0.000
	900.00	27.523	65.145	47.586	15.803	15.803	-42.827	0.000	0.000	0.000
	1000.00	27.948	68.067	49.490	18.577	18.577	-49.490	0.000	0.000	0.000
	1100.00	28.376	70.750	51.302	21.393	21.393	-56.433	0.000	0.000	0.000
	1200.00	28.806	73.238	53.028	24.252	24.252	-63.633	0.000	0.000	0.000
	1300.00	29.235	75.560	54.673	27.154	27.154	-71.075	0.000	0.000	0.000
	1400.00	29.663	77.743	56.243	30.099	30.099	-78.741	0.000	0.000	0.000
	1500.00	30.090	79.804	57.746	33.086	33.086	-86.619	0.000	0.000	0.000
	1600.00	30.515	81.759	59.186	36.117	36.117	-94.698	0.000	0.000	0.000
	1700.00	30.939	83.622	60.569	39.189	39.189	-102.968	0.000	0.000	0.000
	1800.00	31.362	85.402	61.900	42.305	42.305	-111.420	0.000	0.000	0.000
	1900.00	31.783	87.109	63.182	45.462	45.462	-120.046	0.000	0.000	0.000
	2000.00	32.204	88.750	64.420	48.661	48.661	-128.839	0.000	0.000	0.000
	2100.00	32.624	90.332	65.616	51.903	51.903	-137.794	0.000	0.000	0.000
	2200.00	33.043	91.859	66.775	55.186	55.186	-146.904	0.000	0.000	0.000
	2300.00	33.463	93.337	67.897	58.511	58.511	-156.164	0.000	0.000	0.000
	2400.00	33.883	94.770	68.987	61.878	61.878	-165.570	0.000	0.000	0.000
	2500.00	34.304	96.162	70.047	65.288	65.288	-175.117	0.000	0.000	0.000
	2600.00	34.727	97.516	71.077	68.739	68.739	-184.801	0.000	0.000	0.000
	2700.00	35.151	98.834	72.081	72.233	72.233	-194.619	0.000	0.000	0.000
	2740.00	35.321	99.352	72.475	73.643	73.643	-198.582	0.000	0.000	0.000
			9.623		26.368					
LIQ	2740.00	33.472	108.976	72.475	100.011	100.011	-198.582	0.000	0.000	0.000
	2800.00	33.472	109.701	73.265	102.019	102.019	-205.143	0.000	0.000	0.000
	2900.00	33.472	110.875	74.542	105.366	105.366	-216.172	0.000	0.000	0.000
	3000.00	33.472	112.010	75.772	108.713	108.713	-227.317	0.000	0.000	0.000
	3100.00	33.472	113.108	76.959	112.061	112.061	-238.573	0.000	0.000	0.000
	3200.00	33.472	114.170	78.105	115.408	115.408	-249.937	0.000	0.000	0.000
	3300.00	33.472	115.200	79.214	118.755	118.755	-261.406	0.000	0.000	0.000
	3400.00	33.472	116.199	80.287	122.102	122.102	-272.976	0.000	0.000	0.000
	3500.00	33.472	117.170	81.327	125.449	125.449	-284.645	0.000	0.000	0.000
	3600.00	33.472	118.113	82.336	128.797	128.797	-296.409	0.000	0.000	0.000
	3700.00	33.472	119.030	83.315	132.144	132.144	-308.266	0.000	0.000	0.000
	3800.00	33.472	119.922	84.267	135.491	135.491	-320.214	0.000	0.000	0.000
	3900.00	33.472	120.792	85.192	138.838	138.838	-332.250	0.000	0.000	0.000
	4000.00	33.472	121.639	86.093	142.185	142.185	-344.372	0.000	0.000	0.000

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
LIQ	4100.00	33.472	122.466	86.970	145.533	145.533	-356.577	0.000	0.000	0.000
	4200.00	33.472	123.272	87.825	148.880	148.880	-368.864	0.000	0.000	0.000
	4300.00	33.472	124.060	88.658	152.227	152.227	-381.231	0.000	0.000	0.000
	4400.00	33.472	124.829	89.472	155.574	155.574	-393.676	0.000	0.000	0.000
	4500.00	33.472	125.582	90.266	158.921	158.921	-406.196	0.000	0.000	0.000
	4600.00	33.472	126.317	91.042	162.269	162.269	-418.791	0.000	0.000	0.000
	4700.00	33.472	127.037	91.800	165.616	165.616	-431.459	0.000	0.000	0.000
	4800.00	33.472	127.742	92.541	168.963	168.963	-444.198	0.000	0.000	0.000
	4900.00	33.472	128.432	93.267	172.310	172.310	-457.007	0.000	0.000	0.000
	5000.00	33.472	129.108	93.977	175.657	175.657	-469.884	0.000	0.000	0.000
	5013.00	33.472	129.195	94.068	176.092	176.092	-471.563	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL-1	Hu1	Hu1	
LIQ	Hu1	Hu1	Hu1 BPT= 5013., L= 683.2 kJ

Nb[g]

NIOBIUM (GAS)

92.906

Phase	T [K]	C _p [————— J / (K mol)]	S	-(G-H298)/T [—————]	H	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	30.166	186.256	186.256	721.322	0.000	665.790	721.322	676.643	-118.545
	300.00	30.163	186.442	186.256	721.378	0.056	665.445	721.332	676.366	-117.766
	400.00	29.614	195.058	187.435	724.371	3.049	646.348	721.815	661.300	-86.357
	500.00	28.834	201.583	189.639	727.294	5.972	626.503	722.170	646.128	-67.501
	600.00	28.080	206.772	192.077	730.139	8.817	606.076	722.406	630.895	-54.924
	700.00	27.402	211.049	194.491	732.912	11.590	585.178	722.530	615.632	-45.939
	800.00	26.807	214.668	196.793	735.622	14.300	563.888	722.550	600.359	-39.199
	900.00	26.294	217.795	198.956	738.277	16.955	542.261	722.473	585.088	-33.958
	1000.00	25.859	220.542	200.980	740.884	19.562	520.342	722.307	569.832	-29.765
	1100.00	25.500	222.989	202.872	743.451	22.129	498.163	722.058	554.595	-26.336
	1200.00	25.211	225.195	204.642	745.986	24.664	475.752	721.734	539.385	-23.479
	1300.00	24.991	227.204	206.301	748.495	27.173	453.130	721.341	524.205	-21.063
	1400.00	24.835	229.050	207.861	750.986	29.664	430.316	720.887	509.057	-18.993
	1500.00	24.740	230.760	209.331	753.464	32.142	407.325	720.378	493.944	-17.201
	1600.00	24.702	232.355	210.721	755.936	34.614	384.168	719.819	478.867	-15.633
	1700.00	24.719	233.853	212.038	758.407	37.085	360.857	719.217	463.825	-14.252
	1800.00	24.788	235.267	213.290	760.882	39.560	337.401	718.577	448.820	-13.024
	1900.00	24.905	236.610	214.482	763.366	42.044	313.806	717.904	433.852	-11.927
	2000.00	25.068	237.892	215.621	765.864	44.542	290.081	717.203	418.920	-10.941
	2100.00	25.273	239.120	216.711	768.381	47.059	266.230	716.478	404.024	-10.050
	2200.00	25.518	240.301	217.756	770.920	49.598	242.258	715.734	389.162	-9.240
	2300.00	25.799	241.441	218.761	773.486	52.164	218.171	714.975	374.335	-8.501
	2400.00	26.114	242.546	219.729	776.081	54.759	193.971	714.203	359.541	-7.825
	2500.00	26.460	243.619	220.664	778.710	57.388	169.663	713.422	344.780	-7.204
	2600.00	26.833	244.664	221.567	781.374	60.052	145.248	712.635	330.049	-6.631
	2700.00	27.231	245.684	222.441	784.077	62.755	120.731	711.844	315.350	-6.101
	2800.00	27.651	246.682	223.289	786.821	65.499	96.112	684.802	301.255	-5.620
	2900.00	28.090	247.660	224.113	789.608	68.286	71.395	684.242	287.567	-5.180
	3000.00	28.545	248.619	224.914	792.440	71.118	46.581	683.726	273.898	-4.769
	3100.00	29.013	249.563	225.694	795.317	73.995	21.672	683.257	260.245	-4.385
	3200.00	29.491	250.492	226.454	798.242	76.920	-3.331	682.835	246.606	-4.025
	3300.00	29.896	251.405	227.196	801.210	79.888	-28.426	682.455	232.980	-3.688
	3400.00	30.337	252.304	227.922	804.222	82.900	-53.612	682.119	219.364	-3.370
	3500.00	30.771	253.190	228.631	807.277	85.955	-78.886	681.828	205.758	-3.071
	3600.00	31.198	254.062	229.325	810.376	89.054	-104.249	681.579	192.160	-2.788
	3700.00	31.615	254.923	230.006	813.516	92.194	-129.698	681.373	178.568	-2.521
	3800.00	32.021	255.771	230.672	816.698	95.376	-155.233	681.207	164.981	-2.268
	3900.00	32.415	256.608	231.327	819.920	98.598	-180.852	681.082	151.398	-2.028
	4000.00	32.797	257.434	231.969	823.181	101.859	-206.554	680.995	137.817	-1.800
	4100.00	33.166	258.248	232.600	826.479	105.157	-232.339	680.946	124.239	-1.583
	4200.00	33.521	259.052	233.220	829.813	108.491	-258.204	680.934	110.660	-1.376
	4300.00	33.863	259.844	233.830	833.183	111.861	-284.149	680.956	97.082	-1.179
	4400.00	34.192	260.627	234.431	836.586	115.264	-310.172	681.011	83.503	-0.991
	4500.00	34.507	261.399	235.021	840.021	118.699	-336.274	681.099	69.923	-0.812
	4600.00	34.809	262.160	235.603	843.486	122.164	-362.452	681.218	56.340	-0.640
	4700.00	35.097	262.912	236.176	846.982	125.660	-388.705	681.366	42.754	-0.475
	4800.00	35.373	263.654	236.741	850.505	129.183	-415.034	681.543	29.165	-0.317
	4900.00	35.637	264.386	237.298	854.056	132.734	-441.436	681.746	15.571	-0.166
	5000.00	35.888	265.109	237.847	857.632	136.310	-467.911	681.975	1.974	-0.021

92.906

NIOBIUM (GAS) [continued]

Nb[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
GAS	5100.00	36.128	265.822	238.388	861.233	139.911	–494.457	0.000	0.000	0.000
	5200.00	36.357	266.525	238.922	864.858	143.536	–521.075	0.000	0.000	0.000
	5300.00	36.576	267.220	239.450	868.505	147.183	–547.762	0.000	0.000	0.000
	5400.00	36.784	267.906	239.970	872.173	150.851	–574.518	0.000	0.000	0.000
	5500.00	36.983	268.583	240.485	875.861	154.539	–601.343	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Ja1	Ja1

114.528

NIOBIUM DIBORIDE

NbB2

Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	47.885	37.656	37.656	–251.040	0.000	–262.267	–251.040	–247.938	43.438
	300.00	48.087	37.953	37.657	–250.951	0.089	–262.337	–251.039	–247.919	43.166
	400.00	56.516	53.035	39.656	–245.688	5.352	–266.902	–251.016	–246.885	32.240
	500.00	62.488	66.314	43.687	–239.726	11.314	–272.884	–251.083	–245.845	25.683
	600.00	67.492	78.159	48.463	–233.222	17.818	–280.118	–251.149	–244.791	21.311
	700.00	72.039	88.909	53.484	–226.243	24.797	–288.479	–251.129	–243.731	18.187
	800.00	76.343	98.811	58.539	–218.822	32.218	–297.871	–250.964	–242.683	15.846
	900.00	80.505	108.044	63.532	–210.979	40.061	–308.219	–250.617	–241.667	14.026
	1000.00	84.580	116.738	68.422	–202.724	48.316	–319.462	–250.060	–240.700	12.573
	1100.00	88.596	124.988	73.193	–194.065	56.975	–331.552	–249.277	–239.800	11.387
	1200.00	92.574	132.868	77.840	–185.006	66.034	–344.447	–248.255	–238.982	10.403
	1300.00	96.524	140.434	82.365	–175.551	75.489	–358.115	–246.985	–238.259	9.573
	1400.00	100.455	147.731	86.775	–165.702	85.338	–372.525	–245.460	–237.643	8.867

References

Phase	H / S	C _p
SOL	Ku1	Ku1

NbBr5

NIOBIUM PENTABROMIDE

492.426

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	147.904	258.780	258.780	-556.430	0.000	-633.585	-556.430	-509.279	89.224
	300.00	147.904	259.695	258.783	-556.156	0.274	-634.065	-556.552	-508.986	88.622
	400.00	147.904	302.245	264.585	-541.366	15.064	-662.264	-630.477	-477.770	62.390
	500.00	147.904	335.249	275.540	-526.575	29.855	-694.200	-627.485	-439.943	45.960
	527.00	147.904	343.027	278.800	-522.582	33.848	-703.357	-626.697	-429.836	42.604
LIQ			45.571		24.016					
	527.00	206.397	388.598	278.800	-498.566	57.864	-703.357	-602.681	-429.836	42.604
	600.00	206.397	415.374	293.823	-483.499	72.931	-732.724	-596.314	-406.316	35.373
	635.00	206.397	427.076	300.848	-476.275	80.155	-747.468	-593.277	-395.320	32.519

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 NBPT= 635.

NbBr5[g]

NIOBIUM PENTABROMIDE (GAS)

492.426

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	125.803	449.262	449.262	-443.588	0.000	-577.535	-443.588	-453.229	79.404
	300.00	125.884	450.040	449.264	-443.355	0.233	-578.367	-443.751	-453.288	78.925
	400.00	128.842	486.716	454.245	-430.599	12.989	-625.286	-519.711	-440.792	57.562
	500.00	130.291	515.639	463.733	-417.635	25.953	-675.455	-518.545	-421.197	44.002
	600.00	131.105	539.472	474.429	-404.562	39.026	-728.245	-517.377	-401.838	34.983
	700.00	131.605	559.722	485.203	-391.425	52.163	-783.230	-516.227	-382.672	28.555
	800.00	131.935	577.319	495.642	-378.246	65.342	-840.101	-515.107	-363.670	23.745
	900.00	132.163	592.872	505.598	-365.041	78.547	-898.626	-514.026	-344.806	20.012
	1000.00	132.327	606.806	515.034	-351.816	91.772	-958.622	-512.989	-326.060	17.032
	1100.00	132.449	619.424	523.960	-338.577	105.011	-1019.944	-511.998	-307.415	14.598
	1200.00	132.542	630.953	532.402	-325.327	118.261	-1082.471	-511.057	-288.858	12.574
	1300.00	132.614	641.565	540.397	-312.069	131.519	-1146.104	-510.165	-270.378	10.864
	1400.00	132.671	651.395	547.978	-298.805	144.783	-1210.758	-509.324	-251.965	9.401
	1500.00	132.717	660.550	555.181	-285.535	158.053	-1276.360	-508.535	-233.610	8.135
	1600.00	132.754	669.116	562.038	-272.262	171.326	-1342.848	-507.798	-215.306	7.029
	1700.00	132.785	677.166	568.575	-258.985	184.603	-1410.166	-507.113	-197.047	6.055
	1800.00	132.810	684.756	574.821	-245.705	197.883	-1478.266	-506.481	-178.826	5.189
	1900.00	132.831	691.937	580.798	-232.423	211.165	-1547.104	-505.901	-160.639	4.416
	2000.00	132.849	698.751	586.527	-219.139	224.449	-1616.641	-505.374	-142.481	3.721

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T	C _p	S	–(G–H298)/T	H	H–H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		[–]
SOL	298.15	33.345	31.924	31.924	–117.152	0.000	–126.670	–117.152	–114.535	20.066
	300.00	33.435	32.130	31.925	–117.090	0.062	–126.729	–117.148	–114.519	19.940
	400.00	36.919	42.279	33.285	–113.554	3.598	–130.466	–116.899	–113.680	14.845
	500.00	39.037	50.759	35.955	–109.750	7.402	–135.130	–116.660	–112.903	11.795
	600.00	40.617	58.021	39.042	–105.764	11.388	–140.577	–116.467	–112.171	9.765
	700.00	41.944	64.384	42.217	–101.635	15.517	–146.704	–116.318	–111.467	8.318
	800.00	43.136	70.064	45.349	–97.380	19.772	–153.431	–116.194	–110.783	7.233
	900.00	44.249	75.209	48.385	–93.010	24.142	–160.699	–116.078	–110.113	6.391
	1000.00	45.313	79.927	51.307	–88.532	28.620	–168.459	–115.961	–109.457	5.717
	1100.00	46.345	84.294	54.110	–83.949	33.203	–176.673	–115.833	–108.813	5.167
	1200.00	47.355	88.370	56.797	–79.264	37.888	–185.308	–115.689	–108.181	4.709
	1300.00	48.350	92.200	59.374	–74.478	42.674	–194.339	–115.522	–107.561	4.322
	1400.00	49.334	95.819	61.849	–69.594	47.558	–203.741	–115.327	–106.956	3.991
	1500.00	50.310	99.256	64.230	–64.612	52.540	–213.496	–115.100	–106.366	3.704
	1600.00	51.280	102.534	66.522	–59.532	57.620	–223.587	–114.836	–105.792	3.454
	1700.00	52.245	105.672	68.733	–54.356	62.796	–233.999	–114.533	–105.236	3.234
	1800.00	53.206	108.686	70.870	–49.083	68.069	–244.717	–114.189	–104.699	3.038

References

Phase	H / S	C _p
SOL	Tk1	L1,e

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	35.186	32.928	32.928	-124.265	0.000	-134.083	-124.265	-121.729	21.326
	300.00	35.289	33.146	32.929	-124.200	0.065	-134.144	-124.259	-121.713	21.192
	400.00	39.193	43.896	34.368	-120.454	3.811	-138.012	-123.933	-120.913	15.790
	500.00	41.447	52.901	37.199	-116.414	7.851	-142.865	-123.629	-120.194	12.557
	600.00	43.052	60.606	40.474	-112.186	12.079	-148.549	-123.395	-119.530	10.406
	700.00	44.350	67.343	43.841	-107.814	16.451	-154.954	-123.232	-118.900	8.872
	800.00	45.485	73.340	47.160	-103.321	20.944	-161.993	-123.116	-118.289	7.723
	900.00	46.524	78.758	50.375	-98.720	25.545	-169.602	-123.029	-117.691	6.831
	1000.00	47.505	83.711	53.464	-94.018	30.247	-177.729	-122.959	-117.102	6.117
	1100.00	48.447	88.284	56.425	-89.220	35.045	-186.332	-122.897	-116.519	5.533
	1200.00	49.363	92.539	59.259	-84.329	39.936	-195.376	-122.835	-115.942	5.047
	1300.00	50.261	96.525	61.974	-79.348	44.917	-204.831	-122.766	-115.370	4.636
	1400.00	51.145	100.282	64.577	-74.278	49.987	-214.673	-122.683	-114.804	4.283
	1500.00	52.019	103.841	67.077	-69.119	55.146	-224.881	-122.581	-114.245	3.978
	1600.00	52.886	107.226	69.482	-63.874	60.391	-235.435	-122.457	-113.693	3.712
	1700.00	53.747	110.458	71.798	-58.542	65.723	-246.321	-122.306	-113.150	3.477
	1800.00	54.603	113.554	74.032	-53.125	71.140	-257.522	-122.127	-112.617	3.268

References

Phase	H / S	C _p
SOL	Tk1	L1,e

104.917

NIOBIUM CARBIDE

NbC

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	36.858	35.401	35.401	-138.900	0.000	-149.455	-138.900	-136.890	23.983
	300.00	36.995	35.629	35.402	-138.832	0.068	-149.520	-138.893	-136.878	23.833
	400.00	42.092	47.060	36.925	-134.846	4.054	-153.670	-138.455	-136.269	17.795
	500.00	44.840	56.773	39.950	-130.488	8.412	-158.875	-137.996	-135.777	14.185
	600.00	46.663	65.119	43.466	-125.908	12.992	-164.979	-137.606	-135.371	11.785
	700.00	48.050	72.420	47.091	-121.170	17.730	-171.864	-137.294	-135.024	10.076
	800.00	49.204	78.913	50.671	-116.306	22.594	-179.436	-137.044	-134.718	8.796
	900.00	50.223	84.769	54.139	-111.334	27.566	-187.625	-136.836	-134.440	7.803
	1000.00	51.158	90.109	57.473	-106.264	32.636	-196.373	-136.659	-134.183	7.009
	1100.00	52.038	95.027	60.666	-101.104	37.796	-205.633	-136.504	-133.943	6.360
	1200.00	52.880	99.591	63.722	-95.858	43.042	-215.367	-136.363	-133.717	5.821
	1300.00	53.697	103.856	66.647	-90.529	48.371	-225.541	-136.227	-133.502	5.364
	1400.00	54.494	107.865	69.449	-85.119	53.781	-236.129	-136.091	-133.298	4.973
	1500.00	55.277	111.651	72.138	-79.630	59.270	-247.107	-135.950	-133.103	4.635
	1600.00	56.049	115.243	74.721	-74.064	64.836	-258.453	-135.798	-132.918	4.339
	1700.00	56.813	118.664	77.206	-68.421	70.479	-270.150	-135.631	-132.743	4.079
	1800.00	57.570	121.933	79.600	-62.702	76.198	-282.181	-135.448	-132.578	3.847

References

Phase	H / S	C _p	Remarks
SOL	Nb1	Sh1,L1	Tk1 MPT= 3660.

Nb2C

DINIOBIUM CARBIDE

197.824

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
SOL-A	298.15	63.514	63.999	63.999	-190.000	0.000	-209.081	-190.000	-185.664	32.528
	300.00	63.656	64.392	64.000	-189.882	0.118	-209.200	-189.989	-185.637	32.322
	400.00	69.081	83.533	66.573	-183.216	6.784	-216.629	-189.381	-184.276	24.064
	500.00	72.266	99.315	71.590	-176.138	13.862	-225.795	-188.770	-183.072	19.125
	600.00	74.570	112.703	77.354	-168.791	21.209	-236.413	-188.222	-181.985	15.843
	700.00	76.457	124.343	83.253	-161.237	28.763	-248.277	-187.744	-180.984	13.505
	800.00	78.122	134.663	89.047	-153.507	36.493	-261.237	-187.317	-180.048	11.756
	900.00	79.659	143.954	94.640	-145.617	44.383	-275.176	-186.922	-179.163	10.398
	1000.00	81.115	152.423	100.001	-137.578	52.422	-290.001	-186.550	-178.321	9.315
	1100.00	82.519	160.220	105.125	-129.396	60.604	-305.638	-186.189	-177.516	8.430
	1200.00	83.888	167.459	110.022	-121.075	68.925	-322.026	-185.832	-176.743	7.693
	1300.00	85.231	174.227	114.703	-112.619	77.381	-339.114	-185.472	-176.000	7.072
	1400.00	86.556	180.592	119.184	-104.030	85.970	-356.858	-185.101	-175.286	6.540
	1500.00	87.868	186.608	123.481	-95.308	94.692	-375.221	-184.714	-174.598	6.080
	1600.00	89.169	192.321	127.606	-86.456	103.544	-394.170	-184.307	-173.937	5.678
	1700.00	90.463	197.766	131.574	-77.475	112.525	-413.676	-183.875	-173.302	5.325
	1800.00	91.750	202.973	135.397	-68.364	121.636	-433.715	-183.415	-172.693	5.011

References

Phase	H / S	C _p	Remarks
SOL-A	Nb1/L1	Tk1,e	Tk1 TPT= 1503.(SOL-B), 2723.(SOL-C) / DPT= 3259.(LIQ + Nb2Cx)

NbCl2

NIOBIUM DICHLORIDE

163.812

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
SOL	298.15	71.564	117.152	117.152	-407.103	0.000	-442.032	-407.103	-364.657	63.886
	300.00	71.658	117.595	117.153	-406.971	0.132	-442.249	-407.079	-364.393	63.447
	400.00	75.438	138.778	120.016	-399.598	7.505	-455.109	-405.684	-350.371	45.754
	500.00	77.906	155.890	125.534	-391.925	15.178	-469.870	-404.150	-336.717	35.177
	600.00	79.859	170.272	131.823	-384.034	23.069	-486.197	-402.503	-323.383	28.153
	700.00	81.568	182.713	138.224	-375.961	31.142	-503.860	-400.756	-310.334	23.157
	800.00	83.147	193.709	144.486	-367.725	39.378	-522.691	-398.915	-297.541	19.427
	900.00	84.650	203.589	150.513	-359.334	47.769	-542.565	-396.981	-284.984	16.540
	1000.00	86.107	212.584	156.277	-350.796	56.307	-563.380	-394.958	-272.648	14.242

References

Phase	H / S	C _p
SOL	Sc6/Sc3	Sc3

175.511

NIOBIUM 2.33–CHLORIDE

NbCl_{2.33}

Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	79.489	130.541	130.541	–474.499	0.000	–513.420	–474.499	–425.068	74.470
	300.00	79.598	131.033	130.542	–474.352	0.147	–513.662	–474.471	–424.762	73.958
	400.00	83.952	154.587	133.724	–466.154	8.345	–527.989	–472.823	–408.435	53.336
	500.00	86.776	173.640	139.862	–457.610	16.889	–544.430	–471.007	–392.545	41.009
	600.00	88.998	189.663	146.862	–448.818	25.681	–562.616	–469.059	–377.034	32.824
	700.00	90.936	203.531	153.989	–439.820	34.679	–582.291	–466.993	–361.858	27.002
	800.00	92.723	215.791	160.963	–430.636	43.863	–603.269	–464.815	–346.986	22.656

References

Phase	H / S	C _p
SOL	Nb1/e	e

187.565

NIOBIUM 2.67–CHLORIDE

NbCl_{2.67}

Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	85.419	137.235	137.235	–538.100	0.000	–579.017	–538.100	–479.357	83.981
	300.00	85.535	137.764	137.237	–537.942	0.158	–579.271	–538.071	–478.992	83.400
	400.00	90.134	163.064	140.655	–529.137	8.963	–594.362	–536.405	–459.545	60.010
	500.00	93.094	183.512	147.247	–519.967	18.133	–611.723	–534.571	–440.539	46.023
	600.00	95.409	200.696	154.760	–510.539	27.561	–630.956	–532.605	–421.915	36.731
	700.00	97.420	215.557	162.408	–500.896	37.204	–651.785	–530.519	–403.630	30.119
	800.00	99.268	228.688	169.888	–491.060	47.040	–674.010	–528.320	–385.652	25.180
	900.00	101.022	240.482	177.087	–481.045	57.055	–697.479	–526.010	–367.956	21.356
	1000.00	102.717	251.214	183.971	–470.858	67.242	–722.071	–523.590	–350.523	18.309

References

Phase	H / S	C _p
SOL	Nb1/Sc3	Sc3

NbCl3

NIOBIUM TRICHLORIDE

199.264

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
SOL	298.15	93.096	147.277	147.277	-581.576	0.000	-625.487	-581.576	-514.850	90.200
	300.00	93.224	147.853	147.279	-581.404	0.172	-625.760	-581.543	-514.436	89.571
	400.00	98.314	175.440	151.005	-571.802	9.774	-641.978	-579.653	-492.346	64.294
	500.00	101.546	197.745	158.194	-561.800	19.776	-660.673	-577.576	-470.756	49.180
	600.00	104.047	216.488	166.389	-551.517	30.059	-681.409	-575.354	-449.599	39.141
	700.00	106.203	232.692	174.729	-541.002	40.574	-703.886	-573.004	-428.824	31.999
	800.00	108.175	247.003	182.886	-530.282	51.294	-727.885	-570.531	-408.394	26.665

References

Phase	H / S	C _p	Remarks
SOL	Sc3	Sc3	NbCl(2.67-3.13)

NbCl3.13

NIOBIUM 3.13-CHLORIDE

203.873

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
SOL	298.15	97.404	151.461	151.461	-605.425	0.000	-650.583	-605.425	-535.623	93.839
	300.00	97.534	152.064	151.463	-605.245	0.180	-650.864	-605.389	-535.190	93.185
	400.00	102.665	180.896	155.359	-595.210	10.215	-667.569	-603.291	-512.100	66.873
	500.00	105.939	204.177	162.869	-584.771	20.654	-686.859	-601.008	-489.564	51.144
	600.00	108.482	223.724	171.426	-574.046	31.379	-708.280	-598.581	-467.500	40.700
	700.00	110.680	240.615	180.130	-563.086	42.339	-731.516	-596.024	-445.854	33.270
	800.00	112.693	255.527	188.641	-551.916	53.509	-756.338	-593.343	-424.582	27.722
	900.00	114.600	268.911	196.829	-540.551	64.874	-782.571	-590.539	-403.655	23.427
	1000.00	116.441	281.081	204.654	-528.998	76.427	-810.079	-587.615	-383.045	20.008

References

Phase	H / S	C _p
SOL	Sc3,Nb1	Sc3

234.717

NIOBIUM TETRACHLORIDE

NbCl4

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	119.820	184.096	184.096	-694.544	0.000	-749.432	-694.544	-605.535	106.087
	300.00	119.988	184.838	184.098	-694.322	0.222	-749.773	-694.493	-604.983	105.337
	400.00	125.886	220.285	188.891	-681.986	12.558	-770.100	-691.602	-575.575	75.162
	500.00	128.616	248.703	198.107	-669.246	25.298	-793.598	-688.572	-546.917	57.136
	600.00	130.099	272.296	208.562	-656.304	38.240	-819.681	-685.509	-518.874	45.172
	700.00	130.993	292.423	219.140	-643.245	51.299	-847.942	-682.454	-491.343	36.664

References

Phase	H / S	C _p
SOL	Sc3	Sc3



234.717

NIOBIUM TETRACHLORIDE (GAS)

NbCl4[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	98.534	355.749	355.749	-560.991	0.000	-667.058	-560.991	-523.160	91.656
	300.00	98.649	356.359	355.751	-560.809	0.182	-667.716	-560.980	-522.926	91.049
	400.00	102.717	385.380	359.680	-550.711	10.280	-704.863	-560.327	-510.337	66.643
	500.00	104.600	408.526	367.214	-540.335	20.656	-744.598	-559.661	-497.918	52.017
	600.00	105.623	427.696	375.743	-529.819	31.172	-786.437	-559.025	-485.629	42.278
	700.00	106.239	444.028	384.360	-519.224	41.767	-830.043	-558.432	-473.444	35.329
	800.00	106.640	458.242	392.726	-508.578	52.413	-875.172	-557.886	-461.341	30.122
	900.00	106.914	470.819	400.718	-497.900	63.091	-921.637	-557.391	-449.303	26.077
	1000.00	107.110	482.094	408.301	-487.198	73.793	-969.292	-556.945	-437.318	22.843

References

Phase	H / S	C _p
GAS	Nb1/Sc3	Sc3

NbCl5

NIOBIUM PENTACHLORIDE

270.170

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
SOL	298.15	147.904	214.053	214.053	-797.470	0.000	-861.290	-797.470	-684.132	119.857
	300.00	147.904	214.968	214.056	-797.196	0.274	-861.687	-797.399	-683.428	118.995
	400.00	147.904	257.518	219.858	-782.406	15.064	-885.413	-793.787	-645.994	84.358
	478.90	147.904	284.145	228.321	-770.736	26.734	-906.813	-791.168	-617.087	67.307
			70.741		33.878					
LIQ	478.90	218.549	354.886	228.321	-736.858	60.612	-906.813	-791.168	-617.087	67.307
	500.00	216.435	364.264	233.862	-732.269	65.201	-914.401	-755.146	-610.957	63.826
	600.00	206.416	402.839	258.933	-711.127	86.343	-952.830	-745.700	-583.026	50.757

References

Phase	H / S	C _p	Remarks
SOL	G2,Ja1	Ja1	
LIQ	Ja1	Ja1	Ja2 NBPT= 519.2 - 520.6

NbCl5[g]

NIOBIUM PENTACHLORIDE (GAS)

270.170

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
GAS	298.15	119.036	404.117	404.117	-703.330	0.000	-823.817	-703.330	-646.659	113.292
	300.00	119.180	404.853	404.119	-703.110	0.220	-824.566	-703.312	-646.307	112.532
	400.00	124.622	439.979	408.871	-690.887	12.443	-866.878	-702.268	-627.459	81.938
	500.00	127.429	468.120	418.001	-678.270	25.060	-912.330	-701.147	-608.886	63.610
	600.00	129.050	491.508	428.358	-665.440	37.890	-960.345	-700.013	-590.541	51.411
	700.00	130.065	511.483	438.841	-652.480	50.850	-1010.519	-698.895	-572.384	42.712
	800.00	130.741	528.898	449.033	-639.438	63.892	-1062.556	-697.805	-554.386	36.198
	900.00	131.213	544.326	458.780	-626.339	76.991	-1116.232	-696.752	-536.522	31.139
	1000.00	131.554	558.169	468.039	-613.200	90.130	-1171.369	-695.739	-518.773	27.098
	1100.00	131.809	570.720	476.812	-600.031	103.299	-1227.823	-694.771	-501.124	23.796
	1200.00	132.003	582.198	485.123	-586.840	116.490	-1285.477	-693.849	-483.561	21.049
	1300.00	132.154	592.770	493.002	-573.632	129.698	-1344.233	-692.975	-466.072	18.727
	1400.00	132.274	602.568	500.482	-560.410	142.920	-1404.005	-692.151	-448.650	16.739
	1500.00	132.370	611.697	507.596	-547.178	156.152	-1464.724	-691.378	-431.284	15.019
	1600.00	132.448	620.243	514.372	-533.937	169.393	-1526.325	-690.657	-413.968	13.515
	1700.00	132.513	628.275	520.838	-520.689	182.641	-1588.755	-689.990	-396.696	12.189
	1800.00	132.566	635.850	527.020	-507.435	195.895	-1651.965	-689.377	-379.461	11.012
	1900.00	132.610	643.019	532.938	-494.176	209.154	-1715.912	-688.819	-362.259	9.959
	2000.00	132.647	649.822	538.613	-480.913	222.417	-1780.557	-688.317	-345.085	9.013

References

Phase	H / S	C _p
GAS	Ja1	Ja1

NbF5

Phase	T [K]	C _p [————— J / (K mol) —————]	S —(G-H298)/T [————— kJ / mol —————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [—]	
SOL	298.15	32.170	160.247	160.247	-1813.764	0.000	-1861.542	-1813.764	-1699.530	297.751
	300.00	32.441	160.447	160.248	-1813.704	0.060	-1861.838	-1813.895	-1698.821	295.791
	350.70	39.875	166.078	160.680	-1811.871	1.893	-1870.115	-1817.346	-1679.094	250.091
			34.240		12.008					
LIQ	350.70	140.308	200.318	160.680	-1799.863	13.901	-1870.115	-1817.346	-1679.094	250.091
	400.00	145.913	219.134	166.743	-1792.808	20.956	-1880.461	-1803.543	-1661.466	216.965
	500.00	157.281	252.914	180.682	-1777.648	36.116	-1904.105	-1799.359	-1626.415	169.910

References

Phase	H / S	C _p	Remarks
SOL	L1	Pa2	
LIQ	Pa2	Pa2	Pa2 NBPT= 500. (approx.) GAS (NbF5)x

187.898

NIOBIUM PENTAFLUORIDE (GAS)

NbF5[g]

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
GAS	298.15	103.221	382.945	382.945	-1717.532	0.000	-1831.707	-1717.532	-1669.696	292.524
	300.00	103.564	383.585	382.947	-1717.341	0.191	-1832.416	-1717.531	-1669.399	290.668
	400.00	115.673	415.284	387.187	-1706.293	11.239	-1872.407	-1717.028	-1653.411	215.913
	500.00	121.336	441.773	395.533	-1694.412	23.120	-1915.298	-1716.123	-1637.608	171.080
	600.00	124.462	464.197	405.157	-1682.108	35.424	-1960.626	-1715.111	-1621.999	141.208
	700.00	126.390	483.538	415.005	-1669.559	47.973	-2008.035	-1714.086	-1606.562	119.883
	800.00	127.679	500.505	424.654	-1656.851	60.681	-2057.255	-1713.083	-1591.270	103.899
	900.00	128.598	515.599	433.936	-1644.035	73.497	-2108.074	-1712.117	-1576.102	91.475
	1000.00	129.286	529.185	442.793	-1631.139	86.393	-2160.325	-1711.196	-1561.039	81.540
	1100.00	129.823	541.534	451.216	-1618.183	99.349	-2213.870	-1710.322	-1546.066	73.417
	1200.00	130.257	552.849	459.221	-1605.178	112.354	-2268.597	-1709.497	-1531.170	66.650
	1300.00	130.620	563.290	466.830	-1592.134	125.398	-2324.411	-1708.721	-1516.341	60.927
	1400.00	130.930	572.981	474.070	-1579.056	138.476	-2381.230	-1707.995	-1501.571	56.024
	1500.00	131.201	582.024	480.969	-1565.949	151.583	-2438.985	-1707.318	-1486.850	51.777
	1600.00	131.443	590.499	487.552	-1552.817	164.715	-2497.616	-1706.691	-1472.173	48.062
	1700.00	131.661	598.475	493.845	-1539.661	177.871	-2557.068	-1706.112	-1457.533	44.785
1800.00	131.863	606.006	499.869	-1526.485	191.047	-2617.296	-1705.582	-1442.927	41.873	
1900.00	132.049	613.141	505.644	-1513.289	204.243	-2678.256	-1705.101	-1428.348	39.268	
2000.00	132.225	619.918	511.190	-1500.076	217.456	-2739.912	-1704.668	-1413.793	36.924	

References

Phase	H / S	C _p
GAS	L1	e

NbFe2

NIOBIUM 2-IRON

204.600

Phase	T [K]	C_p	S	$-(G-H298)/T$	H	$H-H298$	G	ΔH_f	ΔG_f	$\log K_f$
		[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[- -]
SOL	298.15	54.402	100.002	100.002	-46.401	0.000	-76.217	-46.401	-49.097	8.602
	300.00	54.451	100.338	100.003	-46.300	0.101	-76.402	-46.438	-49.113	8.551
	400.00	57.086	116.364	102.170	-40.723	5.678	-87.269	-48.624	-49.683	6.488
	500.00	59.722	129.386	106.350	-34.883	11.518	-99.576	-51.056	-49.671	5.189
	600.00	62.358	140.507	111.137	-28.779	17.622	-113.083	-53.737	-49.147	4.279
	700.00	64.994	150.318	116.047	-22.411	23.990	-127.634	-56.677	-48.153	3.593
	800.00	67.630	159.169	120.893	-15.780	30.621	-143.115	-59.968	-46.716	3.050
	900.00	70.266	167.286	125.602	-8.885	37.516	-159.443	-63.868	-44.834	2.602
	1000.00	72.902	174.826	130.152	-1.727	44.674	-176.553	-69.035	-42.458	2.218
	1100.00	75.538	181.898	134.538	5.695	52.096	-194.393	-75.529	-39.456	1.874
	1200.00	78.174	188.584	138.766	13.381	59.782	-212.920	-80.960	-35.974	1.566
	1300.00	80.810	194.945	142.844	21.330	67.731	-232.099	-82.800	-32.150	1.292

References

Phase	H / S	C_p	Remarks
SOL	Nb1	Nb1,e	Hu1 NbFe(1.7-2.3), MPT(NbFe2)= 1928.

NbI5

NIOBIUM PENTAIODIDE

727.429

Phase	T [K]	C_p	S	$-(G-H298)/T$	H	$H-H298$	G	ΔH_f	ΔG_f	$\log K_f$
		[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[- -]
SOL	298.15	155.655	343.088	343.088	-268.600	0.000	-370.892	-268.600	-273.469	47.911
	300.00	155.816	344.051	343.091	-268.312	0.288	-371.527	-268.609	-273.500	47.621
	400.00	164.548	390.073	349.307	-252.294	16.306	-408.323	-309.198	-273.656	35.736
	500.00	173.280	427.729	361.333	-235.402	33.198	-449.267	-415.359	-254.582	26.596
	600.00	182.012	460.093	375.156	-217.638	50.962	-493.694	-409.582	-222.955	19.410
LIQ	600.00	184.096	522.853	375.156	-179.982	88.618	-493.694	-371.926	-222.955	19.410
	619.00	184.096	528.593	379.778	-176.484	92.116	-503.683	-370.713	-218.257	18.418

References

Phase	H / S	C_p	Remarks
SOL	Nb1/A2	A2	
LIQ	A2	A2	A2 BPT= 619., L= 59. kJ

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL—A	298.15	38.991	34.518	34.518	-235.099	0.000	-245.391	-235.099	-205.973	36.086
	300.00	39.033	34.759	34.519	-235.027	0.072	-245.455	-235.099	-205.793	35.832
	400.00	41.292	46.298	36.077	-231.011	4.088	-249.530	-235.052	-196.027	25.599
	500.00	43.551	55.754	39.093	-226.768	8.331	-254.646	-234.848	-186.291	19.462
	600.00	45.811	63.894	42.563	-222.300	12.799	-260.637	-234.481	-176.611	15.375
	700.00	50.746	71.651	46.177	-217.267	17.832	-267.423	-233.618	-167.035	12.464
	800.00	51.576	78.482	49.797	-212.151	22.948	-274.937	-232.746	-157.582	10.289
	900.00	52.407	84.604	53.330	-206.952	28.147	-283.096	-231.866	-148.239	8.604
	1000.00	53.237	90.169	56.740	-201.670	33.429	-291.839	-230.978	-138.995	7.260
	1100.00	54.068	95.282	60.014	-196.305	38.794	-301.115	-230.077	-129.840	6.166
	1200.00	54.898	100.022	63.153	-190.856	44.243	-310.883	-229.163	-120.768	5.257
	1300.00	55.729	104.449	66.161	-185.325	49.774	-321.109	-228.230	-111.773	4.491
	1400.00	56.559	108.609	69.046	-179.711	55.388	-331.764	-227.278	-102.850	3.837
	1500.00	57.390	112.540	71.816	-174.013	61.086	-342.823	-226.302	-93.996	3.273
	1600.00	58.220	116.270	74.479	-168.233	66.866	-354.265	-225.301	-85.208	2.782
	1643.00	58.577	117.819	75.593	-165.721	69.378	-359.298	-224.863	-81.449	2.589
SOL—B			2.547		4.184					
	1643.00	62.760	120.366	75.593	-161.537	73.562	-359.298	-220.679	-81.449	2.589
	1700.00	62.760	122.506	77.130	-157.960	77.139	-366.220	-219.864	-76.633	2.355
	1800.00	62.760	126.093	79.752	-151.684	83.415	-378.652	-218.478	-68.248	1.980
	1900.00	62.760	129.487	82.281	-145.408	89.691	-391.433	-217.144	-59.938	1.648
	2000.00	62.760	132.706	84.722	-139.132	95.967	-404.544	-215.862	-51.698	1.350
	2100.00	62.760	135.768	87.081	-132.856	102.243	-417.968	-214.629	-43.520	1.082
	2200.00	62.760	138.687	89.361	-126.580	108.519	-431.692	-213.447	-35.400	0.840
	2300.00	62.760	141.477	91.566	-120.304	114.795	-445.702	-212.313	-27.332	0.621
	2323.00	62.760	142.102	92.064	-118.861	116.238	-448.963	-212.059	-25.484	0.573
LIQ			19.812		46.024					
	2323.00	62.760	161.914	92.064	-72.837	162.262	-448.963	-166.035	-25.484	0.573
	2400.00	62.760	163.961	94.338	-68.004	167.095	-461.509	-165.203	-20.839	0.454
	2500.00	62.760	166.522	97.174	-61.728	173.371	-478.034	-164.164	-14.845	0.310
	2600.00	62.760	168.984	99.889	-55.452	179.647	-494.811	-163.173	-8.892	0.179
	2700.00	62.760	171.353	102.492	-49.176	185.923	-511.828	-162.229	-2.976	0.058
	2800.00	62.760	173.635	104.993	-42.900	192.199	-529.078	-187.581	3.482	-0.065
	2900.00	62.760	175.837	107.398	-36.624	198.475	-546.552	-186.498	10.286	-0.185
	3000.00	62.760	177.965	109.715	-30.348	204.751	-564.243	-185.419	17.053	-0.297

References

Phase	H / S	C _p
SOL—A	Nb1	Sh1,e
SOL—B	Sh1	Sh1
LIQ	Sh1	Sh1

Nb2N

DINIOBIUM NITRIDE

199.819

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	67.488	66.944	66.944	-250.601	0.000	-270.560	-250.601	-220.290	38.594
	300.00	67.520	67.362	66.945	-250.476	0.125	-270.685	-250.594	-220.102	38.323
	400.00	69.231	87.020	69.614	-243.639	6.962	-278.447	-250.237	-209.992	27.422
	500.00	70.942	102.652	74.710	-236.630	13.971	-287.956	-249.834	-199.976	20.891
	600.00	72.653	115.738	80.487	-229.450	21.151	-298.893	-249.364	-190.048	16.545
	700.00	74.363	127.066	86.349	-222.099	28.502	-311.045	-248.832	-180.203	13.447
	800.00	76.074	137.107	92.078	-214.578	36.023	-324.263	-248.244	-170.438	11.128
	900.00	77.785	146.166	97.593	-206.885	43.716	-338.434	-247.602	-160.750	9.330
	1000.00	79.496	154.450	102.870	-199.020	51.581	-353.471	-246.905	-151.137	7.895
	1100.00	80.371	162.068	107.910	-191.027	59.574	-369.302	-246.193	-141.595	6.724
	1200.00	81.247	169.099	112.720	-182.946	67.655	-385.865	-245.504	-132.117	5.751
	1300.00	82.122	175.637	117.311	-174.778	75.823	-403.106	-244.837	-122.695	4.930
	1400.00	82.997	181.755	121.698	-166.522	84.079	-420.978	-244.188	-113.324	4.228
	1500.00	83.872	187.511	125.896	-158.178	92.423	-439.444	-243.554	-103.998	3.622
	1600.00	84.748	192.952	129.918	-149.747	100.854	-458.470	-242.933	-94.715	3.092
	1700.00	85.623	198.116	133.779	-141.229	109.372	-478.026	-242.322	-85.470	2.626
	1800.00	86.498	203.035	137.491	-132.623	117.978	-498.085	-241.721	-76.261	2.213
	1900.00	87.374	207.735	141.065	-123.929	126.672	-518.625	-241.127	-67.085	1.844
	2000.00	88.249	212.239	144.512	-115.148	135.453	-539.625	-240.539	-57.940	1.513
	2100.00	89.124	216.566	147.841	-106.279	144.322	-561.067	-239.955	-48.825	1.214
	2200.00	90.000	220.732	151.060	-97.323	153.278	-582.933	-239.376	-39.737	0.943
	2300.00	90.875	224.752	154.177	-88.279	162.322	-605.209	-238.799	-30.675	0.697
	2400.00	91.750	228.638	157.199	-79.148	171.453	-627.879	-238.225	-21.639	0.471
	2500.00	92.625	232.401	160.132	-69.929	180.672	-650.932	-237.653	-12.626	0.264
	2600.00	93.501	236.051	162.983	-60.623	189.978	-674.356	-237.083	-3.636	0.073
	2673.00	94.140	238.649	165.014	-53.774	196.827	-691.682	-236.668	2.913	-0.057

References

Phase	H / S	C _p	Remarks
SOL	Nb1/Ku1	Sh1	MPT= 2673.

108.906

NIOBIUM MONOXIDE

NbO

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _r [–]
SOL	298.15	41.114	46.024	46.024	–419.655	0.000	–433.377	–419.655	–391.942	68.667
	300.00	41.186	46.279	46.025	–419.579	0.076	–433.462	–419.652	–391.770	68.213
	400.00	44.031	58.557	47.680	–415.304	4.351	–438.727	–419.373	–382.513	49.951
	500.00	45.823	68.586	50.889	–410.806	8.849	–445.099	–418.973	–373.343	39.003
	600.00	47.202	77.066	54.563	–406.153	13.502	–452.393	–418.508	–364.260	31.712
	700.00	48.385	84.433	58.315	–401.372	18.283	–460.476	–418.004	–355.258	26.510
	800.00	49.463	90.965	61.996	–396.479	23.176	–469.252	–417.469	–346.330	22.613
	900.00	50.482	96.851	65.547	–391.482	28.173	–478.647	–416.905	–337.472	19.586
	1000.00	51.462	102.220	68.950	–386.384	33.271	–488.605	–416.312	–328.677	17.168
	1100.00	52.418	107.170	72.202	–381.190	38.465	–499.077	–415.689	–319.944	15.193
	1200.00	53.358	111.772	75.310	–375.901	43.754	–510.027	–415.034	–311.268	13.549
	1300.00	54.285	116.079	78.282	–370.519	49.136	–521.422	–414.345	–302.649	12.161
	1400.00	55.204	120.136	81.128	–365.044	54.611	–533.234	–413.622	–294.084	10.972
	1500.00	56.117	123.976	83.858	–359.478	60.177	–545.442	–412.864	–285.571	9.944
	1600.00	57.024	127.626	86.480	–353.821	65.834	–558.023	–412.071	–277.111	9.047
	1700.00	57.928	131.111	89.004	–348.074	71.581	–570.961	–411.242	–268.701	8.256
	1800.00	58.830	134.447	91.436	–342.236	77.419	–584.240	–410.377	–260.341	7.555
	1900.00	59.728	137.652	93.785	–336.308	83.347	–597.846	–409.476	–252.030	6.929
	2000.00	60.625	140.738	96.056	–330.290	89.365	–611.767	–408.539	–243.768	6.367
	2100.00	61.521	143.718	98.255	–324.183	95.472	–625.991	–407.566	–235.553	5.859
	2200.00	62.415	146.601	100.387	–317.986	101.669	–640.507	–406.556	–227.385	5.399
LIQ	2210.00	62.504	146.884	100.597	–317.361	102.294	–641.975	–406.453	–226.571	5.355
			38.622		85.354					
	2210.00	62.760	185.506	100.597	–232.007	187.648	–641.975	–321.099	–226.571	5.355
	2300.00	62.760	188.011	103.969	–226.359	193.296	–658.784	–320.170	–222.740	5.059
	2400.00	62.760	190.682	107.527	–220.083	199.572	–677.719	–319.188	–218.525	4.756
	2500.00	62.760	193.244	110.905	–213.807	205.848	–696.916	–318.258	–214.350	4.479
	2600.00	62.760	195.705	114.119	–207.531	212.124	–716.365	–317.382	–210.212	4.223
	2700.00	62.760	198.074	117.185	–201.255	218.400	–736.054	–316.559	–206.105	3.987
	2800.00	62.760	200.356	120.115	–194.979	224.676	–755.977	–342.037	–201.453	3.758
	2900.00	62.760	202.559	122.920	–188.703	230.952	–776.123	–341.087	–196.449	3.538
	3000.00	62.760	204.686	125.610	–182.427	237.228	–796.486	–340.147	–191.477	3.334

References

Phase	H / S	C _p
SOL	Ja1	Ja1
LIQ	Ja1	Ja1

NbO2

NIOBIUM DIOXIDE

124.905

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-A	298.15	57.449	54.517	54.517	-794.960	0.000	-811.214	-794.960	-739.197	129.504
	300.00	57.606	54.873	54.519	-794.854	0.106	-811.316	-794.953	-738.851	128.645
	400.00	63.546	72.346	56.861	-788.766	6.194	-817.704	-794.348	-720.229	94.052
	500.00	67.739	86.987	61.461	-782.197	12.763	-825.690	-793.405	-701.803	73.317
	600.00	71.652	99.684	66.796	-775.227	19.733	-835.037	-792.204	-683.591	59.512
	700.00	75.554	111.022	72.317	-767.867	27.093	-845.582	-790.747	-665.601	49.668
	800.00	79.496	121.368	77.811	-760.115	34.845	-857.209	-789.022	-647.837	42.299
	900.00	83.480	130.961	83.190	-751.966	42.994	-869.831	-787.010	-630.307	36.582
	1000.00	87.500	139.964	88.421	-743.417	51.543	-883.381	-784.697	-613.016	32.021
	1090.00	91.142	147.659	92.997	-735.379	59.581	-896.327	-782.347	-597.666	28.641
SOL-B			3.140		3.423					
	1090.00	92.885	150.800	92.997	-731.956	63.004	-896.327	-778.924	-597.666	28.641
	1100.00	92.885	151.648	93.527	-731.027	63.933	-897.839	-778.632	-596.004	28.302
	1200.00	92.885	159.730	98.712	-721.738	73.222	-913.414	-775.751	-579.530	25.226
SOL-C			0.000		0.000					
	1200.00	83.052	159.730	98.712	-721.738	73.222	-913.414	-775.751	-579.530	25.226
	1300.00	83.052	166.378	103.664	-713.433	81.527	-929.724	-773.931	-563.252	22.632
	1400.00	83.052	172.532	108.367	-705.128	89.832	-946.673	-772.184	-547.112	20.413
	1500.00	83.052	178.262	112.837	-696.823	98.137	-964.216	-770.507	-531.094	18.494
	1600.00	83.052	183.622	117.096	-688.517	106.443	-982.313	-768.900	-515.186	16.819
	1700.00	83.052	188.658	121.159	-680.212	114.748	-1000.930	-767.359	-499.377	15.344
	1800.00	83.052	193.405	125.042	-671.907	123.053	-1020.035	-765.885	-483.656	14.035
	1900.00	83.052	197.895	128.759	-663.602	131.358	-1039.602	-764.476	-468.015	12.867
	2000.00	83.052	202.155	132.323	-655.296	139.664	-1059.607	-763.133	-452.447	11.817
	2100.00	83.052	206.207	135.746	-646.991	147.969	-1080.026	-761.855	-436.945	10.868
	2175.00	83.052	209.122	138.226	-640.762	154.198	-1095.602	-760.938	-425.357	10.215
LIQ			42.321		92.048					
	2175.00	94.140	251.443	138.226	-548.714	246.246	-1095.602	-668.890	-425.357	10.215
	2200.00	94.140	252.518	139.519	-546.361	248.599	-1101.901	-668.316	-422.561	10.033
	2300.00	94.140	256.703	144.523	-536.947	258.013	-1127.364	-666.058	-411.441	9.344
	2400.00	94.140	260.710	149.282	-527.533	267.427	-1153.236	-663.864	-400.418	8.715
	2500.00	94.140	264.553	153.816	-518.119	276.841	-1179.500	-661.734	-389.485	8.138
	2600.00	94.140	268.245	158.147	-508.705	286.255	-1206.142	-659.668	-378.636	7.607
	2700.00	94.140	271.798	162.291	-499.291	295.669	-1233.145	-657.665	-367.866	7.117
	2800.00	94.140	275.221	166.263	-489.877	305.083	-1260.497	-681.974	-356.592	6.652
	2900.00	94.140	278.525	170.078	-480.463	314.497	-1288.185	-679.865	-345.008	6.214
	3000.00	94.140	281.716	173.746	-471.049	323.911	-1316.198	-677.775	-333.497	5.807

References

Phase	H / S	C _p
SOL-A	Ja1	Ja1
SOL-B	Ja1	Ja1
SOL-C	Sh1	Ja1
LIQ	Sh1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f kJ / mol	ΔG _f kJ / mol	log K _f [–]
SOL–A	298.15	132.025	137.319	137.319	–1899.536	0.000	–1940.478	–1899.536	–1765.860	309.371
	300.00	132.294	138.136	137.321	–1899.292	0.244	–1940.732	–1899.518	–1765.031	307.319
	400.00	144.863	178.010	142.673	–1885.401	14.135	–1956.605	–1898.077	–1720.394	224.660
	500.00	153.990	211.369	153.166	–1870.435	29.101	–1976.119	–1895.894	–1676.213	175.113
	600.00	160.763	240.072	165.314	–1854.681	44.855	–1998.724	–1893.258	–1632.519	142.123
	700.00	165.936	265.260	177.829	–1838.335	61.201	–2024.017	–1890.346	–1589.290	118.594
	800.00	169.951	287.690	190.186	–1821.532	78.004	–2051.685	–1887.265	–1546.491	100.975
	900.00	173.087	307.896	202.161	–1804.374	95.162	–2081.481	–1884.082	–1504.084	87.295
	1000.00	175.532	326.265	213.667	–1786.938	112.598	–2113.203	–1880.848	–1462.035	76.369
	1100.00	177.429	343.088	224.678	–1769.286	130.250	–2146.682	–1877.602	–1420.311	67.445
	1200.00	178.891	358.591	235.200	–1751.467	148.069	–2181.776	–1874.373	–1378.882	60.021
	1300.00	180.015	372.957	245.251	–1733.519	166.017	–2218.363	–1871.187	–1337.721	53.750
	1400.00	180.890	386.331	254.856	–1715.472	184.064	–2256.335	–1868.063	–1296.802	48.384
	1500.00	181.597	398.836	264.042	–1697.346	202.190	–2295.600	–1865.016	–1256.105	43.741
	1600.00	182.212	410.575	272.838	–1679.156	220.380	–2336.076	–1862.053	–1215.608	39.686
	1700.00	182.809	421.640	281.268	–1660.905	238.631	–2377.692	–1859.177	–1175.294	36.112
	1785.00	183.357	430.572	288.167	–1645.343	254.193	–2413.914	–1856.799	–1141.158	33.394
LIQ			58.412		104.265					
	1785.00	242.254	488.984	288.167	–1541.078	358.458	–2413.914	–1752.534	–1141.158	33.394
	1800.00	242.254	491.011	289.849	–1537.444	362.092	–2421.264	–1751.237	–1136.026	32.967
	1900.00	242.254	504.109	300.784	–1513.219	386.317	–2471.026	–1742.675	–1102.082	30.298
	2000.00	242.254	516.535	311.264	–1488.994	410.542	–2522.064	–1734.255	–1068.585	27.909
	2100.00	242.254	528.355	321.322	–1464.768	434.768	–2574.313	–1725.976	–1035.506	25.757
	2200.00	242.254	539.624	330.991	–1440.543	458.993	–2627.716	–1717.838	–1002.817	23.810
	2300.00	242.254	550.393	340.298	–1416.317	483.219	–2682.221	–1709.839	–970.496	22.041
	2400.00	242.254	560.703	349.268	–1392.092	507.444	–2737.779	–1701.981	–938.520	20.426
	2500.00	242.254	570.592	357.925	–1367.867	531.669	–2794.348	–1694.261	–906.868	18.948

References

Phase	H / S	C _p
SOL–A	Ja1,Nb1	Ja1
LIQ	Sh1	Ja1,Sh1

NbOCl2

NIOBIUM DICHLORIDE OXIDE

179.811

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	93.220	121.336	121.336	-774.500	0.000	-810.676	-774.500	-702.719	123.113
	300.00	93.350	121.913	121.338	-774.327	0.173	-810.901	-774.463	-702.274	122.277
	400.00	98.481	149.542	125.070	-764.711	9.789	-824.528	-772.310	-678.528	88.607
	500.00	101.755	171.889	132.270	-754.691	19.809	-840.635	-769.958	-655.351	68.464
	600.00	104.298	190.673	140.480	-744.384	30.116	-858.788	-767.475	-632.661	55.078
	700.00	106.496	206.919	148.836	-733.842	40.658	-878.685	-764.887	-610.395	45.548
	800.00	108.509	221.272	157.011	-723.091	51.409	-900.109	-762.199	-588.507	38.426
	900.00	110.416	234.164	164.879	-712.144	62.356	-922.891	-759.411	-566.962	32.906
	1000.00	112.257	245.893	172.403	-701.010	73.490	-946.903	-756.523	-545.733	28.506

References

Phase	H / S	C _p
SOL	Nb1/e	e

NbOCl3

NIOBIUM TRICHLORIDE OXIDE

215.264

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	119.820	142.001	142.001	-879.477	0.000	-921.815	-879.477	-780.596	136.757
	300.00	119.988	142.742	142.003	-879.255	0.222	-922.078	-879.422	-779.983	135.807
	400.00	125.886	178.190	146.796	-866.919	12.558	-938.195	-876.283	-747.302	97.588
	500.00	128.616	206.608	156.012	-854.179	25.298	-957.483	-872.997	-715.435	74.741
	600.00	130.099	230.201	166.467	-841.237	38.240	-979.357	-869.696	-684.233	59.568
	700.00	130.993	250.328	177.045	-828.178	51.299	-1003.408	-866.429	-653.582	48.771
	702.00	131.007	250.702	177.254	-827.916	51.561	-1003.909	-866.365	-652.974	48.587

References

Phase	H / S	C _p	Remarks
SOL	Sc4/Nb1	Sc4	Tk1 NSPT= 550. / MPT= 702.

215.264

NIOBIUM TRICHLORIDE OXIDE (GAS)

NbOCl3[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	92.002	358.302	358.302	–752.300	0.000	–859.128	–752.300	–717.909	125.775
	300.00	92.118	358.871	358.303	–752.130	0.170	–859.791	–752.297	–717.696	124.962
	400.00	96.186	386.013	361.976	–742.685	9.615	–897.091	–752.049	–706.197	92.220
	500.00	98.069	407.702	369.026	–732.962	19.338	–936.813	–751.780	–694.765	72.582
	600.00	99.092	425.681	377.013	–723.100	29.200	–978.508	–751.559	–683.384	59.494
	700.00	99.708	441.006	385.087	–713.157	39.143	–1021.861	–751.408	–672.035	50.148
	800.00	100.108	454.348	392.929	–703.165	49.135	–1066.643	–751.332	–660.702	43.139
	900.00	100.383	466.156	400.422	–693.140	59.160	–1112.680	–751.329	–649.374	37.689
	1000.00	100.579	476.743	407.534	–683.091	69.209	–1159.834	–751.397	–638.043	33.328

References

Phase	H / S	C _p
GAS	Nb1	Sc4e

160.358

NIOBIUM CHLORIDE DIOXIDE

NbO2Cl

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	93.096	88.701	88.701	–983.240	0.000	–1009.686	–983.240	–904.408	158.448
	300.00	93.224	89.277	88.703	–983.068	0.172	–1009.851	–983.199	–903.918	157.386
	400.00	98.314	116.864	92.429	–973.466	9.774	–1020.212	–980.813	–877.843	114.635
	500.00	101.546	139.169	99.618	–963.464	19.776	–1033.049	–978.223	–852.398	89.049
	600.00	104.047	157.912	107.813	–953.181	30.059	–1047.928	–975.526	–827.485	72.039
	700.00	106.203	174.116	116.153	–942.666	40.574	–1064.547	–972.753	–803.029	59.923
	800.00	108.175	188.427	124.310	–931.946	51.294	–1082.688	–969.913	–778.976	50.862
	900.00	110.040	201.277	132.160	–921.035	62.205	–1102.184	–967.001	–755.283	43.835
	1000.00	111.838	212.964	139.665	–909.940	73.300	–1122.905	–964.012	–731.918	38.231

References

Phase	H / S	C _p
SOL	A3	e

NbSi2

NIOBIUM 2-SILICON

149.077

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G [————— kJ / mol —————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	64.612	69.873	69.873	-125.520	0.000	-146.353	-125.520	-124.277	21.773
	300.00	64.680	70.273	69.874	-125.400	0.120	-146.482	-125.520	-124.270	21.637
	400.00	67.574	89.304	72.449	-118.778	6.742	-154.500	-125.653	-123.839	16.172
	500.00	69.738	104.623	77.401	-111.909	13.611	-164.221	-125.910	-123.357	12.887
	600.00	71.615	117.507	83.040	-104.840	20.680	-175.344	-126.203	-122.819	10.692
	700.00	73.357	128.678	88.779	-97.590	27.930	-187.665	-126.500	-122.231	9.121
	800.00	75.026	138.583	94.397	-90.171	35.349	-201.037	-126.787	-121.602	7.940
	900.00	76.653	147.514	99.810	-82.587	42.933	-215.349	-127.057	-120.937	7.019
	1000.00	78.254	155.673	104.994	-74.841	50.679	-230.514	-127.304	-120.244	6.281
	1100.00	79.838	163.206	109.948	-66.936	58.584	-246.463	-127.526	-119.527	5.676
	1200.00	81.411	170.221	114.682	-58.874	66.646	-263.138	-127.720	-118.791	5.171
	1300.00	82.975	176.799	119.210	-50.654	74.866	-280.493	-127.887	-118.040	4.743
	1400.00	84.533	183.005	123.547	-42.279	83.241	-298.486	-128.024	-117.277	4.376
	1500.00	86.087	188.890	127.709	-33.748	91.772	-317.083	-128.130	-116.505	4.057
	1600.00	87.638	194.496	131.709	-25.062	100.458	-336.255	-128.205	-115.728	3.778
	1700.00	89.186	199.855	135.561	-16.220	109.300	-355.974	-128.604	-114.053	3.504
	1800.00	90.732	204.997	139.277	-7.225	118.295	-376.218	-128.162	-107.326	3.115
	1900.00	92.276	209.943	142.867	1.926	127.446	-396.967	-127.608	-100.628	2.766
	2000.00	93.819	214.716	146.341	11.231	136.751	-418.201	-126.942	-93.962	2.454

References

Phase	H / S	C _p	Remarks
SOL	Tk1/Ku1	Ku1	Tk1 MPT= 2223.

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
SOL	298.15	181.373	251.040	251.040	-510.448	0.000	-585.296	-510.448	-514.198	90.085
	300.00	181.639	252.163	251.043	-510.112	0.336	-585.761	-510.451	-514.221	89.534
	400.00	192.047	305.993	258.312	-491.376	19.072	-613.773	-510.635	-515.450	67.311
	500.00	198.518	349.585	272.346	-471.829	38.619	-646.621	-510.765	-516.637	53.973
	600.00	203.439	386.229	288.353	-451.722	58.726	-683.460	-510.834	-517.804	45.079
	700.00	207.628	417.911	304.649	-431.165	79.283	-723.702	-510.867	-518.962	38.725
	800.00	211.428	445.887	320.588	-410.209	100.239	-766.919	-510.886	-520.117	33.960
	900.00	215.001	470.997	335.929	-388.887	121.561	-812.784	-510.902	-521.271	30.254
	1000.00	218.432	493.828	350.594	-367.214	143.234	-861.042	-510.926	-522.421	27.288
	1100.00	221.772	514.805	364.582	-345.203	165.245	-911.488	-510.962	-523.569	24.862
	1200.00	225.050	534.242	377.920	-322.862	187.586	-963.952	-511.014	-524.713	22.840
	1300.00	228.283	552.384	390.650	-300.195	210.253	-1018.293	-511.082	-525.852	21.129
	1400.00	231.484	569.418	402.817	-277.206	233.242	-1074.392	-511.169	-526.985	19.662
	1500.00	234.661	585.498	414.465	-253.899	256.549	-1132.145	-511.275	-528.111	18.390
	1600.00	237.820	600.743	425.635	-230.275	280.173	-1191.464	-511.399	-529.230	17.278
	1700.00	240.966	615.255	436.366	-206.335	304.113	-1252.269	-662.073	-529.000	16.254
	1800.00	244.100	629.117	446.692	-182.082	328.366	-1314.493	-661.554	-521.186	15.124
	1900.00	247.226	642.399	456.645	-157.515	352.933	-1378.074	-660.932	-513.405	14.114
	2000.00	250.345	655.159	466.254	-132.637	377.811	-1442.956	-660.209	-505.658	13.206

References

Phase	H / S	C _p
SOL	Tk1/e	Ku1

Nd

NEODYMIUM

144.240

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [—]
SOL-A	298.15	27.415	71.086	71.086	0.000	0.000	-21.194	0.000	0.000	0.000
	300.00	27.438	71.256	71.087	0.051	0.051	-21.326	0.000	0.000	0.000
	400.00	28.761	79.326	72.178	2.859	2.859	-28.871	0.000	0.000	0.000
	500.00	30.294	85.905	74.284	5.810	5.810	-37.142	0.000	0.000	0.000
	600.00	32.079	91.582	76.704	8.927	8.927	-46.022	0.000	0.000	0.000
	700.00	34.131	96.677	79.199	12.235	12.235	-55.439	0.000	0.000	0.000
	800.00	36.454	101.384	81.681	15.762	15.762	-65.345	0.000	0.000	0.000
	900.00	39.052	105.825	84.119	19.535	19.535	-75.707	0.000	0.000	0.000
	1000.00	41.927	110.085	86.504	23.581	23.581	-86.504	0.000	0.000	0.000
	1100.00	45.079	114.227	88.837	27.929	27.929	-97.720	0.000	0.000	0.000
	1128.00	46.011	115.372	89.481	29.205	29.205	-100.935	0.000	0.000	0.000
SOL-B			2.685		3.029					
	1128.00	44.560	118.057	89.481	32.234	32.234	-100.935	0.000	0.000	0.000
	1200.00	44.560	120.814	91.279	35.442	35.442	-109.535	0.000	0.000	0.000
	1289.00	44.560	124.002	93.430	39.408	39.408	-120.431	0.000	0.000	0.000
LIQ			5.508		7.100					
	1289.00	48.785	129.510	93.430	46.508	46.508	-120.431	0.000	0.000	0.000
	1300.00	48.785	129.925	93.737	47.044	47.044	-121.858	0.000	0.000	0.000
	1400.00	48.785	133.540	96.453	51.923	51.923	-135.034	0.000	0.000	0.000
	1500.00	48.785	136.906	99.039	56.801	56.801	-148.558	0.000	0.000	0.000
	1600.00	48.785	140.055	101.505	61.680	61.680	-162.408	0.000	0.000	0.000
	1700.00	48.785	143.012	103.860	66.558	66.558	-176.562	0.000	0.000	0.000
	1800.00	48.785	145.801	106.114	71.437	71.437	-191.004	0.000	0.000	0.000
	1900.00	48.785	148.438	108.272	76.316	76.316	-205.718	0.000	0.000	0.000
	2000.00	48.785	150.941	110.344	81.194	81.194	-220.688	0.000	0.000	0.000
	2100.00	48.785	153.321	112.334	86.073	86.073	-235.902	0.000	0.000	0.000
	2200.00	48.785	155.591	114.249	90.951	90.951	-251.348	0.000	0.000	0.000
	2300.00	48.785	157.759	116.094	95.830	95.830	-267.016	0.000	0.000	0.000
	2400.00	48.785	159.835	117.874	100.708	100.708	-282.897	0.000	0.000	0.000
	2500.00	48.785	161.827	119.592	105.587	105.587	-298.981	0.000	0.000	0.000
	2600.00	48.785	163.740	121.254	110.465	110.465	-315.260	0.000	0.000	0.000
	2700.00	48.785	165.582	122.862	115.344	115.344	-331.726	0.000	0.000	0.000
	2800.00	48.785	167.356	124.419	120.222	120.222	-348.374	0.000	0.000	0.000
	2900.00	48.785	169.068	125.929	125.101	125.101	-365.195	0.000	0.000	0.000
	3000.00	48.785	170.722	127.395	129.980	129.980	-382.185	0.000	0.000	0.000
	3100.00	48.785	172.321	128.819	134.858	134.858	-399.338	0.000	0.000	0.000
	3200.00	48.785	173.870	130.202	139.737	139.737	-416.648	0.000	0.000	0.000
	3300.00	48.785	175.371	131.549	144.615	144.615	-434.110	0.000	0.000	0.000
	3337.00	48.785	175.915	132.038	146.420	146.420	-440.609	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL-A	Hu1	Hu1	
SOL-B	Hu1	Hu1	
LIQ	Hu1,e	Hu1	Hu1 BPT= 3337., L= 273.0 kJ

144.240

NEODYMIUM (GAS)

Nd[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	22.098	189.406	189.406	327.607	0.000	271.136	327.607	292.330	–51.215
	300.00	22.118	189.543	189.407	327.648	0.041	270.785	327.597	292.111	–50.861
	400.00	23.722	196.115	190.292	329.936	2.329	251.490	327.077	280.362	–36.611
	500.00	25.199	201.575	192.017	332.386	4.779	231.598	326.576	268.741	–28.075
	600.00	26.305	206.272	194.011	334.964	7.357	211.201	326.037	257.223	–22.393
	700.00	27.138	210.392	196.063	337.638	10.031	190.363	325.403	245.803	–18.342
	800.00	27.786	214.060	198.087	340.385	12.778	169.137	324.623	234.482	–15.310
	900.00	28.308	217.364	200.049	343.191	15.584	147.563	323.656	223.271	–12.958
	1000.00	28.742	220.369	201.933	346.044	18.437	125.674	322.462	212.178	–11.083
	1100.00	29.112	223.127	203.736	348.937	21.330	103.498	321.008	201.218	–9.555
	1200.00	29.434	225.674	205.459	351.865	24.258	81.056	316.423	190.591	–8.296
	1300.00	29.718	228.041	207.106	354.822	27.215	58.369	307.778	180.227	–7.242
	1400.00	29.968	230.252	208.681	357.807	30.200	35.453	305.884	170.487	–6.361
	1500.00	30.231	232.329	210.189	360.817	33.210	12.323	304.015	160.881	–5.602
	1600.00	30.484	234.288	211.635	363.852	36.245	–11.009	302.172	151.399	–4.943
	1700.00	30.716	236.143	213.022	366.913	39.306	–34.531	300.354	142.031	–4.364
	1800.00	30.926	237.905	214.356	369.995	42.388	–58.234	298.558	132.770	–3.853
	1900.00	31.115	239.582	215.640	373.097	45.490	–82.109	296.782	123.608	–3.398
	2000.00	31.287	241.183	216.878	376.217	48.610	–106.148	295.023	114.539	–2.991
	2100.00	31.445	242.713	218.072	379.354	51.747	–130.344	293.281	105.558	–2.626
	2200.00	31.596	244.179	219.225	382.506	54.899	–154.689	291.555	96.659	–2.295
	2300.00	31.742	245.587	220.341	385.673	58.066	–179.178	289.843	87.839	–1.995
	2400.00	31.887	246.941	221.421	388.854	61.247	–203.804	288.146	79.092	–1.721
	2500.00	32.035	248.246	222.468	392.050	64.443	–228.564	286.464	70.416	–1.471
	2600.00	32.190	249.505	223.484	395.262	67.655	–253.452	284.796	61.808	–1.242
	2700.00	32.355	250.723	224.471	398.489	70.882	–278.464	283.145	53.262	–1.030
	2800.00	32.530	251.903	225.429	401.733	74.126	–303.595	281.511	44.778	–0.835
	2900.00	32.720	253.048	226.362	404.995	77.388	–328.843	279.894	36.352	–0.655
	3000.00	32.926	254.161	227.270	408.278	80.671	–354.204	278.298	27.981	–0.487
	3100.00	33.150	255.244	228.155	411.581	83.974	–379.674	276.723	19.664	–0.331
	3200.00	33.392	256.300	229.018	414.908	87.301	–405.252	275.172	11.396	–0.186
	3300.00	33.656	257.331	229.861	418.260	90.653	–430.934	273.645	3.177	–0.050
	3400.00	33.941	258.340	230.684	421.640	94.033	–456.717	0.000	0.000	0.000
	3500.00	34.249	259.329	231.488	425.049	97.442	–482.601	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

NdBr3

NEODYMIUM BROMIDE

383.952

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	99.136	194.138	194.138	-873.201	0.000	-931.083	-873.201	-841.817	147.483
	300.00	99.233	194.751	194.139	-873.018	0.183	-931.443	-873.278	-841.622	146.539
	400.00	103.611	223.931	198.088	-862.864	10.337	-952.436	-917.656	-821.840	107.321
	500.00	107.137	247.439	205.682	-852.323	20.878	-976.042	-915.604	-798.121	83.379
	600.00	110.329	267.258	214.335	-841.447	31.754	-1001.802	-913.423	-774.827	67.455
	700.00	113.362	284.494	223.153	-830.262	42.939	-1029.408	-911.149	-751.906	56.108
	800.00	116.311	299.825	231.796	-818.778	54.423	-1058.638	-908.813	-729.316	47.619
	900.00	119.211	313.692	240.137	-807.001	66.200	-1089.324	-906.446	-707.021	41.034
	955.00	120.793	320.810	244.580	-800.401	72.800	-1106.775	-905.141	-694.873	38.007
LIQ			47.448		45.313					
	955.00	154.808	368.258	244.580	-755.088	118.113	-1106.775	-859.828	-694.873	38.007
	1000.00	154.808	375.386	250.307	-748.122	125.079	-1123.508	-857.261	-687.160	35.894
	1100.00	154.808	390.141	262.359	-732.641	140.560	-1161.796	-851.788	-670.418	31.835
	1200.00	154.808	403.611	273.577	-717.160	156.041	-1201.493	-849.489	-653.971	28.467
	1300.00	154.808	416.002	284.062	-701.679	171.522	-1242.482	-851.289	-637.834	25.628

References

Phase	H / S	C _p
SOL	Pa2	Pa2
LIQ	Pa2	Pa2

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	80.048	401.874	401.874	-578.229	0.000	-698.048	-578.229	-608.781	106.656
	300.00	80.113	402.369	401.875	-578.081	0.148	-698.792	-578.342	-608.971	106.031
	400.00	82.508	425.785	405.052	-569.936	8.293	-740.250	-624.728	-609.654	79.613
	500.00	83.826	444.350	411.119	-561.614	16.615	-783.789	-624.895	-605.867	63.295
	600.00	84.722	459.716	417.975	-553.184	25.045	-829.014	-625.159	-602.039	52.412
	700.00	85.417	472.830	424.897	-544.676	33.553	-875.657	-625.563	-598.155	44.635
	800.00	86.006	484.276	431.619	-536.104	42.125	-923.524	-626.139	-594.203	38.797
	900.00	86.533	494.436	438.045	-527.477	50.752	-972.470	-626.921	-590.166	34.252
	1000.00	87.021	503.579	444.149	-518.799	59.430	-1022.378	-627.938	-586.030	30.611
	1100.00	87.484	511.895	449.935	-510.073	68.156	-1073.158	-629.220	-581.780	27.626
	1200.00	87.930	519.526	455.421	-501.303	76.926	-1124.734	-633.631	-577.212	25.125
	1300.00	88.364	526.582	460.627	-492.488	85.741	-1177.044	-642.097	-572.396	22.999
	1400.00	88.789	533.146	465.575	-483.630	94.599	-1230.034	-643.805	-566.970	21.154
	1500.00	89.208	539.286	470.287	-474.730	103.499	-1283.659	-645.479	-561.423	19.550
	1600.00	89.622	545.056	474.781	-465.789	112.440	-1337.879	-647.120	-555.765	18.144
	1700.00	90.032	550.502	479.077	-456.806	121.423	-1392.659	-648.728	-550.006	16.900
	1800.00	90.439	555.660	483.189	-447.782	130.447	-1447.970	-650.302	-544.153	15.791
	1900.00	90.843	560.560	487.134	-438.718	139.511	-1503.783	-651.843	-538.214	14.797
	2000.00	91.246	565.230	490.923	-429.614	148.615	-1560.074	-653.352	-532.194	13.899

References

Phase	H / S	C _p
GAS	Pa2	Pa2

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	99.102	153.427	153.427	-1041.816	0.000	-1087.560	-1041.816	-966.583	169.341
	300.00	99.185	154.041	153.429	-1041.633	0.183	-1087.845	-1041.778	-966.116	168.216
	400.00	103.681	183.189	157.373	-1031.489	10.327	-1104.765	-1039.644	-941.214	122.910
	500.00	108.192	206.810	164.969	-1020.896	20.920	-1124.301	-1037.357	-916.867	95.784
	600.00	112.710	226.935	173.659	-1009.851	31.965	-1146.012	-1034.882	-892.998	77.742
	700.00	117.230	244.648	182.560	-998.354	43.462	-1169.608	-1032.208	-869.560	64.887
	800.00	121.752	260.598	191.333	-986.405	55.411	-1194.883	-1029.344	-846.518	55.272
	900.00	126.274	275.199	199.852	-974.003	67.813	-1221.682	-1026.304	-823.845	47.815
	1000.00	130.798	288.737	208.071	-961.150	80.666	-1249.887	-1023.109	-801.520	41.867
	1032.00	132.245	292.880	210.637	-956.941	84.875	-1259.193	-1022.057	-794.445	40.211
LIQ			48.651		50.208					
	1032.00	146.440	341.531	210.637	-906.733	135.083	-1259.193	-971.849	-794.445	40.211
	1100.00	146.440	350.876	219.020	-896.775	145.041	-1282.739	-968.713	-782.858	37.175
	1200.00	146.440	363.618	230.547	-882.131	159.685	-1318.472	-967.227	-765.967	33.342
	1300.00	146.440	375.339	241.240	-867.487	174.329	-1355.428	-969.845	-749.319	30.108

References

Phase	H / S	C _p
SOL	Pa2	Pa2
LIQ	Dw1	Dw1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		
GAS	298.15	78.326	374.381	374.381	-718.811	0.000	-830.433	-718.811	-709.455	124.294
	300.00	78.386	374.865	374.382	-718.666	0.145	-831.126	-718.811	-709.397	123.517
	400.00	80.659	397.759	377.488	-710.703	8.108	-869.806	-718.857	-706.255	92.227
	500.00	82.276	415.936	383.422	-702.554	16.257	-910.522	-719.015	-703.088	73.451
	600.00	83.701	431.065	390.136	-694.254	24.557	-952.893	-719.284	-699.880	60.930
	700.00	84.967	444.065	396.933	-685.819	32.992	-996.664	-719.673	-696.616	51.982
	800.00	86.066	455.484	403.553	-677.266	41.545	-1041.653	-720.205	-693.288	45.267
	900.00	86.991	465.677	409.899	-668.611	50.200	-1087.721	-720.912	-689.883	40.040
	1000.00	87.745	474.883	415.945	-659.873	58.938	-1134.756	-721.832	-686.388	35.853
	1100.00	88.335	483.275	421.690	-651.068	67.743	-1182.670	-723.005	-682.789	32.423
	1200.00	88.773	490.981	427.148	-642.211	76.600	-1231.388	-727.307	-678.883	29.551
	1300.00	89.074	498.099	432.335	-633.318	85.493	-1280.847	-735.676	-674.737	27.111
	1400.00	89.255	504.707	437.271	-624.400	94.411	-1330.991	-737.308	-669.988	24.998
	1500.00	89.333	510.869	441.975	-615.470	103.341	-1381.773	-738.940	-665.123	23.162
	1600.00	89.327	516.634	446.463	-606.537	112.274	-1433.151	-740.579	-660.148	21.552
	1700.00	89.257	522.048	450.751	-597.607	121.204	-1485.088	-742.232	-655.071	20.128
	1800.00	89.141	527.146	454.855	-588.687	130.124	-1537.550	-743.906	-649.895	18.859
	1900.00	89.001	531.962	458.788	-579.780	139.031	-1590.508	-745.604	-644.626	17.722
	2000.00	88.856	536.524	462.562	-570.887	147.924	-1643.934	-747.327	-639.267	16.696

References

Phase	H / S	C _p
GAS	Pa2	Pa2

NdF3

NEODYMIUM FLUORIDE

201.235

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
SOL	298.15	92.420	120.792	120.792	-1679.458	0.000	-1715.472	-1679.458	-1603.583	280.941
	300.00	92.552	121.364	120.794	-1679.287	0.171	-1715.696	-1679.425	-1603.112	279.127
	400.00	98.034	148.805	124.498	-1669.735	9.723	-1729.257	-1677.502	-1577.960	206.060
	500.00	101.829	171.107	131.659	-1659.734	19.724	-1745.287	-1675.496	-1553.306	162.273
	600.00	104.961	189.956	139.844	-1649.391	30.067	-1763.364	-1673.479	-1529.057	133.116
	700.00	107.780	206.350	148.199	-1638.752	40.706	-1783.197	-1671.474	-1505.146	112.315
	800.00	110.432	220.917	156.394	-1627.840	51.618	-1804.574	-1669.498	-1481.520	96.733
	900.00	112.987	234.072	164.306	-1616.669	62.789	-1827.333	-1667.571	-1458.139	84.628
	1000.00	115.481	246.106	171.893	-1605.245	74.213	-1851.351	-1665.714	-1434.969	74.955
	1100.00	117.936	257.228	179.151	-1593.574	85.884	-1876.524	-1663.951	-1411.981	67.049
	1200.00	120.365	267.594	186.094	-1581.658	97.800	-1902.771	-1665.140	-1388.960	60.460
	1300.00	122.774	277.323	192.741	-1569.501	109.957	-1930.022	-1670.206	-1365.967	54.885
	1400.00	125.170	286.510	199.114	-1557.104	122.354	-1958.218	-1668.331	-1342.633	50.094
	1500.00	127.555	295.227	205.233	-1544.468	134.990	-1987.308	-1666.239	-1319.440	45.947
	1600.00	129.933	303.535	211.120	-1531.593	147.865	-2017.249	-1663.928	-1296.395	42.323
	1650.00	131.120	307.551	213.981	-1525.067	154.391	-2032.527	-1662.690	-1284.928	40.677
LIQ			33.218		54.810					
	1650.00	172.775	340.770	213.981	-1470.257	209.201	-2032.527	-1607.880	-1284.928	40.677
	1700.00	172.807	345.928	217.786	-1461.617	217.841	-2049.695	-1604.533	-1275.192	39.182
	1800.00	172.809	355.806	225.182	-1444.336	235.122	-2084.786	-1597.849	-1256.012	36.449

References

Phase	H / S	C _p
SOL	Pa2	Pa2
LIQ	S3	S3

201.235

NEODYMIUM FLUORIDE (GAS)

NdF₃[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	72.197	340.766	340.767	–1238.882	0.000	–1340.482	–1238.882	–1228.592	215.244
	300.00	72.302	341.213	340.768	–1238.748	0.134	–1341.112	–1238.886	–1228.528	213.906
	400.00	76.574	362.652	343.662	–1231.286	7.596	–1376.347	–1239.053	–1225.049	159.975
	500.00	79.430	380.062	349.255	–1223.479	15.403	–1413.510	–1239.241	–1221.528	127.612
	600.00	81.628	394.746	355.645	–1215.422	23.460	–1452.269	–1239.510	–1217.962	106.033
	700.00	83.399	407.466	362.159	–1207.167	31.715	–1492.394	–1239.889	–1214.342	90.615
	800.00	84.843	418.700	368.538	–1198.753	40.129	–1533.713	–1240.410	–1210.659	79.048
	900.00	86.013	428.763	374.681	–1190.208	48.674	–1576.095	–1241.110	–1206.900	70.047
	1000.00	86.946	437.876	380.552	–1181.558	57.324	–1619.434	–1242.027	–1203.052	62.841
	1100.00	87.670	446.198	386.147	–1172.825	66.057	–1663.644	–1243.202	–1199.100	56.941
	1200.00	88.211	453.851	391.474	–1164.030	74.852	–1708.651	–1247.512	–1194.840	52.010
	1300.00	88.593	460.928	396.548	–1155.188	83.694	–1754.395	–1255.893	–1190.340	47.828
	1400.00	88.839	467.503	401.384	–1146.316	92.566	–1800.820	–1257.543	–1185.235	44.222
	1500.00	88.969	473.637	405.999	–1137.425	101.457	–1847.880	–1259.195	–1180.013	41.092
	1600.00	89.006	479.381	410.408	–1128.525	110.357	–1895.534	–1260.859	–1174.680	38.349
	1700.00	88.972	484.776	414.625	–1119.626	119.256	–1943.745	–1262.541	–1169.242	35.926
	1800.00	88.886	489.859	418.665	–1110.732	128.150	–1992.479	–1264.245	–1163.705	33.770
	1900.00	88.771	494.662	422.540	–1101.849	137.033	–2041.708	–1265.975	–1158.072	31.838
	2000.00	88.647	499.212	426.261	–1092.978	145.904	–2091.403	–1267.731	–1152.348	30.096

References

Phase	H / S	C _p
GAS	Pa2	Pa2

146.256

NEODYMIUM DIHYDRIDE

NdH₂

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	43.044	58.911	58.911	–192.000	0.000	–209.564	–192.000	–149.408	26.176
	300.00	43.074	59.177	58.912	–191.920	0.080	–209.673	–192.024	–149.143	25.968
	400.00	44.685	71.789	60.620	–187.532	4.468	–216.248	–193.351	–134.650	17.583
	500.00	46.296	81.934	63.900	–182.983	9.017	–223.950	–194.675	–119.821	12.518
	600.00	47.907	90.517	67.639	–178.273	13.727	–232.583	–196.011	–104.725	9.117
	700.00	49.518	98.023	71.454	–173.402	18.598	–242.018	–197.386	–89.403	6.671
	800.00	51.128	104.740	75.202	–168.370	23.630	–252.162	–198.833	–73.879	4.824
	900.00	52.739	110.855	78.829	–163.176	28.824	–262.946	–200.387	–58.168	3.376
	1000.00	54.350	116.495	82.317	–157.822	34.178	–274.317	–202.083	–42.276	2.208
	1100.00	55.961	121.751	85.665	–152.306	39.694	–286.232	–203.954	–26.207	1.244
	1200.00	57.572	126.689	88.880	–146.630	45.370	–298.656	–208.868	–9.770	0.425

References

Phase	H / S	C _p
SOL	Nb1/B2	B2,e

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL-A	298.15	98.742	230.538	230.538	-639.298	0.000	-708.033	-639.298	-634.897	111.231
	300.00	98.876	231.150	230.540	-639.115	0.183	-708.460	-639.317	-634.870	110.541
	400.00	104.634	260.440	234.495	-628.920	10.378	-733.096	-664.388	-632.396	82.582
	500.00	108.922	284.264	242.139	-618.235	21.063	-760.367	-728.945	-618.189	64.582
	600.00	112.636	304.457	250.884	-607.154	32.144	-789.829	-726.607	-596.255	51.909
	700.00	116.081	322.081	259.822	-595.717	43.581	-821.174	-724.122	-574.724	42.886
	800.00	119.383	337.798	268.604	-583.943	55.355	-854.181	-721.533	-553.557	36.144
	847.00	120.904	344.657	272.636	-578.296	61.002	-870.220	-720.291	-543.724	33.532
SOL-B			16.301		13.807					
	847.00	117.098	360.958	272.636	-564.489	74.809	-870.220	-706.484	-543.724	33.532
	900.00	117.098	368.065	278.048	-558.283	81.015	-889.541	-705.317	-533.576	30.968
	1000.00	117.098	380.402	287.678	-546.573	92.725	-926.976	-703.335	-514.603	26.880
	1060.00	117.098	387.226	293.121	-539.547	99.751	-950.006	-702.294	-503.310	24.802
LIQ			39.156		41.505					
	1060.00	155.745	426.381	293.121	-498.042	141.256	-950.006	-660.789	-503.310	24.802
	1100.00	155.745	432.150	298.072	-491.812	147.486	-967.178	-658.614	-497.408	23.620
	1200.00	155.745	445.702	309.818	-476.238	163.060	-1011.080	-656.254	-482.797	21.016
	1300.00	155.745	458.168	320.757	-460.663	178.635	-1056.282	-657.994	-468.501	18.825

References

Phase	H / S	C _p
SOL-A	Nb1/Pa2	Dw4,Pa2
SOL-B	Dw4	Pa2
LIQ	Dw4	Dw4

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	81.579	430.643	430.643	-366.518	0.000	-494.914	-366.518	-421.778	73.894
	300.00	81.625	431.148	430.645	-366.367	0.151	-495.711	-366.569	-422.121	73.498
	400.00	83.384	454.899	433.871	-358.107	8.411	-540.066	-393.575	-439.366	57.375
	500.00	84.406	473.623	440.015	-349.714	16.804	-586.525	-460.424	-444.347	46.421
	600.00	85.138	489.080	446.941	-341.235	25.283	-634.683	-460.688	-441.109	38.402
	700.00	85.733	502.250	453.925	-332.691	33.827	-684.265	-461.096	-437.816	32.670
	800.00	86.255	513.732	460.698	-324.091	42.427	-735.077	-461.682	-434.453	28.367
	900.00	86.735	523.920	467.168	-315.441	51.077	-786.969	-462.475	-431.004	25.015
	1000.00	87.189	533.082	473.309	-306.745	59.773	-839.827	-463.507	-427.454	22.328
	1100.00	87.625	541.412	479.127	-298.004	68.514	-893.558	-464.806	-423.788	20.124
	1200.00	88.050	549.055	484.640	-289.220	77.298	-948.086	-469.236	-419.803	18.274
	1300.00	88.466	556.119	489.870	-280.394	86.124	-1003.349	-477.725	-415.568	16.698
	1400.00	88.877	562.690	494.840	-271.527	94.991	-1059.294	-479.457	-410.722	15.324
	1500.00	89.283	568.836	499.570	-262.619	103.899	-1115.873	-481.157	-405.752	14.130
	1600.00	89.685	574.611	504.082	-253.671	112.847	-1173.049	-482.827	-400.671	13.081
	1700.00	90.085	580.060	508.392	-244.682	121.836	-1230.785	-484.465	-395.486	12.152
	1800.00	90.483	585.221	512.518	-235.654	130.864	-1289.051	-486.072	-390.205	11.323
	1900.00	90.880	590.123	516.475	-226.586	139.932	-1347.820	-487.648	-384.836	10.580
	2000.00	91.275	594.795	520.275	-217.478	149.040	-1407.068	-489.194	-379.385	9.909

References

Phase	H / S	C _p
GAS	Pa2	Pa2

Nd2O3

NEODYMIUM OXIDE

336.478

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-A	298.15	111.332	158.574	158.574	-1807.906	0.000	-1855.185	-1807.906	-1721.049	301.521
	300.00	111.550	159.263	158.576	-1807.700	0.206	-1855.479	-1807.883	-1720.510	299.567
	400.00	120.230	192.660	163.070	-1796.070	11.836	-1873.134	-1806.327	-1691.607	220.901
	500.00	125.860	220.125	171.816	-1783.751	24.155	-1893.814	-1804.498	-1663.136	173.747
	600.00	130.289	243.476	181.861	-1770.937	36.969	-1917.023	-1802.656	-1635.038	142.343
	700.00	134.152	263.855	192.149	-1757.712	50.194	-1942.411	-1800.930	-1607.241	119.934
	800.00	137.712	282.003	202.267	-1744.117	63.789	-1969.720	-1799.394	-1579.678	103.142
	900.00	141.097	298.420	212.053	-1730.175	77.731	-1998.754	-1798.106	-1552.294	90.093
	1000.00	144.372	313.457	221.452	-1715.901	92.005	-2029.358	-1797.118	-1525.037	79.660
	1100.00	147.577	327.368	230.456	-1701.303	106.603	-2061.408	-1796.480	-1497.863	71.128
	1200.00	150.732	340.344	239.079	-1686.387	121.519	-2094.800	-1801.913	-1470.354	64.003
	1300.00	153.854	352.532	247.342	-1671.158	136.748	-2129.450	-1815.262	-1442.638	57.966
	1395.00	156.796	363.486	254.881	-1656.402	151.504	-2163.466	-1814.924	-1415.419	52.999
			0.420		0.586					
SOL-B	1395.00	155.645	363.907	254.881	-1655.816	152.090	-2163.466	-1814.338	-1415.419	52.999
	1400.00	155.645	364.463	255.272	-1655.038	152.868	-2165.286	-1814.319	-1413.989	52.757
	1500.00	155.645	375.202	262.913	-1639.473	168.433	-2202.276	-1813.974	-1385.406	48.244
	1600.00	155.645	385.247	270.249	-1623.909	183.997	-2240.304	-1813.667	-1356.845	44.296
	1700.00	155.645	394.683	277.293	-1608.344	199.562	-2279.305	-1813.397	-1328.302	40.814
	1800.00	155.645	403.579	284.065	-1592.780	215.126	-2319.222	-1813.164	-1299.774	37.718
	1900.00	155.645	411.994	290.578	-1577.215	230.691	-2360.005	-1812.966	-1271.258	34.949
	2000.00	155.645	419.978	296.850	-1561.651	246.255	-2401.607	-1812.802	-1242.752	32.457

References

Phase	H / S	C _p	Remarks
SOL-A	Pa1	Pa1	
SOL-B	Pa1	Pa1	Ku1 MPT= 2545.

NdOCl

NEODYMIUM CHLORIDE OXIDE

195.692

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	69.847	94.558	94.558	-999.976	0.000	-1028.169	-999.976	-943.131	165.233
	300.00	69.937	94.991	94.560	-999.847	0.129	-1028.344	-999.956	-942.778	164.152
	400.00	73.782	115.677	97.354	-992.647	7.329	-1038.918	-998.784	-923.891	120.648
	500.00	76.588	132.453	102.748	-985.123	14.853	-1051.350	-997.526	-905.313	94.577
	600.00	78.986	146.633	108.911	-977.343	22.633	-1065.322	-996.259	-886.990	77.219
	700.00	81.191	158.976	115.200	-969.333	30.643	-1080.616	-995.023	-868.876	64.836
	800.00	83.293	169.956	121.370	-961.108	38.868	-1097.072	-993.846	-850.937	55.560
	900.00	85.336	179.885	127.329	-952.676	47.300	-1114.572	-992.753	-833.140	48.354
	1000.00	87.341	188.980	133.045	-944.042	55.934	-1133.021	-991.767	-815.459	42.595
	1100.00	89.322	197.397	138.518	-935.209	64.767	-1152.345	-990.913	-797.870	37.888

References

Phase	H / S	C _p
SOL	Nb1/e	e

Phase	T [K]	C _p [————— J / (K mol)	S J / (K mol)	–(G–H298)/T [————— kJ / mol	H [————— kJ / mol	H–H298 [————— kJ / mol	G [————— kJ / mol	ΔH _f [————— kJ / mol	ΔG _f [————— kJ / mol	log K _f [–]
SOL	298.15	223.387	259.408	259.408	–4046.924	0.000	–4124.266	–4046.924	–3844.624	673.562
	300.00	224.025	260.792	259.412	–4046.510	0.414	–4124.748	–4046.895	–3843.369	669.190
	400.00	248.028	328.929	268.539	–4022.768	24.156	–4154.340	–4044.288	–3775.872	493.078
	500.00	261.542	385.839	286.470	–3997.239	49.685	–4190.159	–4040.617	–3709.182	387.496
	600.00	270.928	434.394	307.177	–3970.594	76.330	–4231.230	–4036.645	–3643.266	317.175
	700.00	278.365	476.734	328.439	–3943.118	103.806	–4276.831	–4032.707	–3578.016	266.995
	800.00	284.763	514.331	349.369	–3914.955	131.969	–4326.419	–4028.977	–3513.318	229.396
	900.00	290.557	548.210	369.611	–3886.185	160.739	–4379.574	–4025.568	–3449.069	200.179
	1000.00	295.976	579.106	389.038	–3856.856	190.068	–4435.962	–4022.560	–3385.179	176.824
	1100.00	301.150	607.560	407.627	–3826.998	219.926	–4495.314	–4020.023	–3321.568	157.728
	1200.00	306.157	633.979	425.402	–3796.631	250.293	–4557.406	–4031.107	–3257.345	141.789
	1300.00	311.047	658.679	442.407	–3765.770	281.154	–4622.052	–4041.729	–3192.890	128.292
	1400.00	315.851	681.906	458.692	–3734.425	312.499	–4689.093	–4038.608	–3127.710	116.696

References

Phase	H / S	C _p
SOL	Ku1	e

Phase	T [K]	C _p [————— J / (K mol)	S J / (K mol)	–(G–H298)/T [————— kJ / mol	H [————— kJ / mol	H–H298 [————— kJ / mol	G [————— kJ / mol	ΔH _f [————— kJ / mol	ΔG _f [————— kJ / mol	log K _f [–]
SOL	298.15	48.686	77.822	77.822	–451.872	0.000	–475.075	–451.872	–444.323	77.844
	300.00	48.702	78.124	77.823	–451.782	0.090	–475.219	–451.875	–444.276	77.355
	400.00	49.539	92.249	79.744	–446.870	5.002	–483.769	–454.353	–441.621	57.670
	500.00	50.375	103.393	83.397	–441.874	9.998	–493.571	–456.210	–438.247	45.783
	600.00	51.212	112.651	87.523	–436.795	15.077	–504.386	–457.823	–434.497	37.826
	700.00	52.049	120.609	91.694	–431.632	20.240	–516.058	–459.278	–430.495	32.124
	800.00	52.886	127.613	95.755	–426.385	25.487	–528.476	–460.918	–426.274	27.833
	900.00	53.723	133.891	99.649	–421.055	30.817	–541.556	–515.567	–420.681	24.416
	1000.00	54.559	139.594	103.363	–415.641	36.231	–555.235	–516.035	–410.115	21.422
	1100.00	55.396	144.834	106.898	–410.143	41.729	–569.460	–516.727	–399.491	18.970
	1200.00	56.233	149.690	110.264	–404.561	47.311	–584.189	–520.506	–388.606	16.916
	1300.00	57.070	154.224	113.473	–398.896	52.976	–599.387	–528.298	–377.527	15.169
	1400.00	57.907	158.484	116.537	–393.147	58.725	–615.024	–529.287	–365.891	13.652
	1500.00	58.743	162.507	119.469	–387.315	64.557	–631.076	–530.196	–354.188	12.334
	1600.00	59.580	166.325	122.279	–381.399	70.473	–647.519	–531.027	–342.426	11.179
	1700.00	60.417	169.962	124.978	–375.399	76.473	–664.335	–531.778	–330.615	10.159
	1800.00	61.254	173.439	127.575	–369.315	82.557	–681.506	–532.450	–318.763	9.250
	1900.00	62.091	176.774	130.077	–363.148	88.724	–699.018	–533.042	–306.875	8.437
	2000.00	62.927	179.980	132.492	–356.897	94.975	–716.857	–533.554	–294.957	7.703

References

Phase	H / S	C _p	Remarks
SOL	Mi1	Mi1	Mi1 MPT= 2400.

Nd2S3

NEODYMIUM SULFIDE

384.678

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f kJ / mol	ΔG _f kJ / mol	log K _f [-]
SOL	298.15	122.512	185.272	185.272	-1188.001	0.000	-1243.240	-1188.001	-1172.179	205.361
	300.00	122.537	186.030	185.274	-1187.774	0.227	-1243.583	-1188.002	-1172.080	204.077
	400.00	123.872	221.464	190.096	-1175.454	12.547	-1264.040	-1195.043	-1166.465	152.325
	500.00	125.206	249.249	199.247	-1163.000	25.001	-1287.624	-1200.197	-1158.797	121.059
	600.00	126.541	272.194	209.547	-1150.413	37.588	-1313.729	-1204.570	-1150.084	100.124
	700.00	127.876	291.801	219.931	-1137.692	50.309	-1341.952	-1208.395	-1140.702	85.120
	800.00	129.210	308.963	230.009	-1124.838	63.163	-1372.008	-1212.674	-1130.749	73.830
	900.00	130.545	324.259	239.647	-1111.850	76.151	-1403.683	-1375.852	-1116.764	64.815
	1000.00	131.880	338.083	248.810	-1098.729	89.272	-1436.811	-1376.329	-1087.955	56.829
	1100.00	133.214	350.715	257.508	-1085.474	102.527	-1471.260	-1377.297	-1059.075	50.291
	1200.00	134.549	362.363	265.767	-1072.086	115.915	-1506.921	-1384.479	-1029.707	44.822
	1300.00	135.884	373.185	273.619	-1058.564	129.437	-1543.705	-1399.724	-999.982	40.180
	1400.00	137.218	383.304	281.096	-1044.909	143.092	-1581.535	-1401.404	-969.169	36.160
	1500.00	138.553	392.817	288.230	-1031.120	156.881	-1620.346	-1402.964	-938.240	32.672
	1600.00	139.888	401.802	295.050	-1017.198	170.803	-1660.081	-1404.403	-907.211	29.617
	1700.00	141.223	410.322	301.582	-1003.143	184.858	-1700.691	-1405.723	-876.095	26.919
	1800.00	142.557	418.432	307.850	-988.954	199.047	-1742.132	-1406.921	-844.905	24.519
	1900.00	143.892	426.176	313.876	-974.631	213.370	-1784.365	-1407.997	-813.652	22.369
	2000.00	145.227	433.590	319.677	-960.175	227.826	-1827.356	-1408.952	-782.346	20.433

References

Phase	H / S	C _p	Remarks
SOL	Nb1/Mi1	Mi1	Mi1 MPT= 2480.

Nd2(SO4)3

NEODYMIUM SULFATE

576.671

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f kJ / mol	ΔG _f kJ / mol	log K _f [-]
SOL	298.15	272.638	288.278	288.278	-3899.488	0.000	-3985.438	-3899.488	-3547.389	621.488
	300.00	273.006	289.965	288.283	-3898.983	0.505	-3985.973	-3899.537	-3545.204	617.275
	400.00	292.880	371.226	299.228	-3870.689	28.799	-4019.179	-3908.431	-3426.467	447.451
	500.00	312.754	438.715	320.554	-3840.407	59.081	-4059.765	-3914.111	-3305.365	345.309
	600.00	332.628	497.494	345.244	-3808.138	91.350	-4106.634	-3917.759	-3183.231	277.125
	700.00	352.502	550.261	370.823	-3773.882	125.606	-4159.064	-3919.576	-3060.649	228.388
	800.00	372.376	598.628	396.316	-3737.638	161.850	-4216.541	-3920.487	-2937.875	191.824
	900.00	392.250	643.635	421.323	-3699.406	200.082	-4278.678	-4078.854	-2811.578	163.180
	1000.00	412.124	685.992	445.692	-3659.188	240.300	-4345.180	-4073.005	-2671.073	139.523
	1100.00	431.998	726.203	469.379	-3616.982	282.506	-4415.805	-4066.077	-2531.207	120.197

References

Phase	H / S	C _p
SOL	Ku1	e

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	49.360	90.374	90.374	-359.824	0.000	-386.769	-359.824	-352.975	61.840
	300.00	49.371	90.680	90.375	-359.733	0.091	-386.937	-359.830	-352.933	61.451
	400.00	49.999	104.969	92.319	-354.764	5.060	-396.752	-360.338	-350.566	45.779
	500.00	50.626	116.193	96.011	-349.733	10.091	-407.830	-367.068	-347.950	36.350
	600.00	51.254	125.479	100.171	-344.639	15.185	-419.926	-368.605	-343.984	29.946
	700.00	51.882	133.427	104.367	-339.482	20.342	-432.881	-370.271	-339.750	25.352
	800.00	52.509	140.396	108.444	-334.263	25.561	-446.579	-372.093	-335.268	21.891
	900.00	53.137	146.617	112.346	-328.980	30.844	-460.935	-374.098	-330.546	19.184
	1000.00	53.764	152.248	116.059	-323.635	36.189	-475.883	-376.314	-325.590	17.007
	1100.00	54.392	157.401	119.586	-318.227	41.597	-491.369	-432.081	-315.447	14.979
	1200.00	55.020	162.161	122.938	-312.757	47.067	-507.350	-436.190	-304.602	13.259
	1300.00	55.647	166.590	126.128	-307.223	52.601	-523.790	-444.315	-293.535	11.794
	1400.00	56.275	170.737	129.168	-301.627	58.197	-540.659	-445.642	-281.886	10.517
	1500.00	56.902	174.641	132.070	-295.969	63.855	-557.929	-446.893	-270.145	9.407
	1600.00	57.530	178.333	134.847	-290.247	69.577	-575.580	-448.069	-258.323	8.433
	1700.00	58.158	181.840	137.509	-284.463	75.361	-593.590	-449.169	-246.430	7.572
	1800.00	58.785	185.182	140.066	-278.615	81.209	-611.942	-450.194	-234.474	6.804
	1900.00	59.413	188.377	142.525	-272.705	87.119	-630.621	-451.143	-222.464	6.116
	2000.00	60.040	191.440	144.895	-266.733	93.091	-649.613	-452.017	-210.405	5.495

References

Phase	H / S	C _p	Remarks
SOL	Mi1	Mi1	Mi1 MPT= 2100.

Nd2Se3

NEODYMIUM SELENIDE

525.360

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	130.159	185.268	185.268	-941.400	0.000	-996.638	-941.400	-916.451	160.558
	300.00	130.185	186.073	185.270	-941.159	0.241	-996.981	-941.402	-916.296	159.541
	400.00	131.587	223.717	190.393	-928.071	13.329	-1017.557	-941.933	-907.871	118.556
	500.00	132.988	253.230	200.114	-914.842	26.558	-1041.457	-961.037	-898.959	93.914
	600.00	134.390	277.600	211.055	-901.473	39.927	-1068.033	-964.445	-886.227	77.153
	700.00	135.792	298.422	222.085	-887.964	53.436	-1096.859	-968.096	-872.906	65.137
	800.00	137.193	316.646	232.789	-874.315	67.085	-1127.631	-972.044	-859.042	56.090
	900.00	138.595	332.886	243.025	-860.525	80.875	-1160.123	-976.344	-844.663	49.023
	1000.00	139.997	347.561	252.757	-846.596	94.804	-1194.157	-981.052	-829.783	43.343
	1100.00	141.398	360.970	261.993	-832.526	108.874	-1229.593	-1146.156	-799.547	37.967
	1200.00	142.800	373.333	270.763	-818.316	123.084	-1266.316	-1153.175	-767.605	33.413
	1300.00	144.202	384.819	279.100	-803.966	137.434	-1304.230	-1168.197	-735.322	29.546
	1400.00	145.603	395.556	287.039	-789.476	151.924	-1343.255	-1169.596	-701.971	26.191
	1500.00	147.005	405.650	294.613	-774.845	166.555	-1383.320	-1170.817	-668.525	23.280
	1600.00	148.406	415.182	301.854	-760.075	181.325	-1424.366	-1171.860	-635.004	20.731
	1700.00	149.808	424.221	308.788	-745.164	196.236	-1466.340	-1172.726	-601.423	18.479
	1800.00	151.210	432.824	315.442	-730.113	211.287	-1509.195	-1173.412	-567.796	16.477
	1830.00	151.630	435.326	317.387	-725.570	215.830	-1522.218	-1173.583	-557.701	15.919

References

Phase	H / S	C _p	Remarks
SOL	Mi1	Mi1	Mi1 MPT= 1830.

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
SOL	298.15	50.188	97.487	97.487	–301.248	0.000	–330.314	–301.248	–294.362	51.571
	300.00	50.200	97.798	97.488	–301.155	0.093	–330.494	–301.253	–294.319	51.246
	400.00	50.810	112.323	99.464	–296.105	5.143	–341.034	–301.697	–291.949	38.125
	500.00	51.421	123.727	103.217	–290.993	10.255	–352.856	–302.442	–289.432	30.237
	600.00	52.032	133.156	107.443	–285.820	15.428	–365.714	–303.513	–286.735	24.963
	700.00	52.643	141.222	111.706	–280.587	20.661	–379.442	–304.936	–283.832	21.180
	800.00	53.254	148.292	115.846	–275.292	25.956	–393.925	–324.359	–278.819	18.205
	900.00	53.865	154.599	119.808	–269.936	31.312	–409.075	–326.541	–272.997	15.844
	1000.00	54.476	160.306	123.577	–264.519	36.729	–424.825	–328.936	–266.921	13.943
	1100.00	55.087	165.527	127.157	–259.041	42.207	–441.120	–331.572	–260.595	12.375
	1200.00	55.697	170.346	130.558	–253.501	47.747	–457.917	–337.311	–253.828	11.049
	1300.00	56.308	174.829	133.793	–247.901	53.347	–475.179	–347.078	–246.703	9.913
	1400.00	56.919	179.024	136.875	–242.240	59.008	–492.873	–396.501	–236.379	8.819
	1500.00	57.530	182.972	139.818	–236.517	64.731	–510.975	–397.848	–224.894	7.832
	1600.00	58.141	186.704	142.633	–230.734	70.514	–529.461	–399.127	–213.322	6.964
	1700.00	58.752	190.247	145.330	–224.889	76.359	–548.310	–400.340	–201.671	6.197
	1800.00	59.363	193.623	147.920	–218.983	82.265	–567.504	–401.487	–189.951	5.512
	1900.00	59.973	196.849	150.411	–213.017	88.231	–587.029	–402.565	–178.170	4.898
	2000.00	60.584	199.940	152.811	–206.989	94.259	–606.870	–403.570	–166.333	4.344
	2028.00	60.755	200.784	153.467	–205.290	95.958	–612.480	–403.840	–163.010	4.199

References

Phase	H / S	C _p	Remarks
SOL	Mi1	Mi1	Mi1 MPT= 2028.

Nd2Te3

NEODYMIUM TELLURIDE

671.280

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	132.741	253.383	253.383	-794.960	0.000	-870.506	-794.960	-783.845	137.326
	300.00	132.767	254.204	253.386	-794.714	0.246	-870.976	-794.959	-783.776	136.468
	400.00	134.164	292.590	258.610	-781.368	13.592	-898.404	-795.285	-780.021	101.860
	500.00	135.562	322.678	268.521	-767.882	27.078	-929.221	-796.419	-776.091	81.078
	600.00	136.959	347.517	279.677	-754.256	40.704	-962.766	-798.407	-771.853	67.196
	700.00	138.357	368.735	290.920	-740.490	54.470	-998.604	-801.302	-767.212	57.250
	800.00	139.754	387.301	301.831	-726.584	68.376	-1036.425	-858.023	-756.450	49.391
	900.00	141.151	403.842	312.263	-712.539	82.421	-1075.997	-862.820	-743.470	43.150
	1000.00	142.549	418.786	322.180	-698.354	96.606	-1117.140	-868.025	-729.933	38.128
	1100.00	143.946	432.438	331.592	-684.029	110.931	-1159.711	-873.693	-715.854	33.993
	1200.00	145.344	445.023	340.527	-669.565	125.395	-1203.592	-885.550	-700.859	30.508
	1300.00	146.741	456.712	349.020	-654.960	140.000	-1248.686	-905.448	-685.119	27.528
	1400.00	148.139	467.638	357.107	-640.216	154.744	-1294.909	-1051.076	-660.459	24.642
	1500.00	149.536	477.906	364.821	-625.333	169.627	-1342.192	-1052.524	-632.506	22.026
	1600.00	150.934	487.601	372.195	-610.309	184.651	-1390.472	-1053.809	-604.462	19.734
	1650.00	151.632	492.257	375.763	-602.745	192.215	-1414.969	-1054.393	-590.411	18.691

References

Phase	H / S	C _p	Remarks
SOL	Mi1	Mi1	Mi1 MPT= 1650.

20.180

NEON (MONOATOMIC GAS)

Ne[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
GAS	298.15	20.786	146.324	146.324	0.000	0.000	–43.626	0.000	0.000	0.000
	300.00	20.786	146.452	146.324	0.038	0.038	–43.897	0.000	0.000	0.000
	400.00	20.786	152.432	147.139	2.117	2.117	–58.856	0.000	0.000	0.000
	500.00	20.786	157.070	148.679	4.196	4.196	–74.339	0.000	0.000	0.000
	600.00	20.786	160.860	150.403	6.274	6.274	–90.242	0.000	0.000	0.000
	700.00	20.786	164.064	152.131	8.353	8.353	–106.492	0.000	0.000	0.000
	800.00	20.786	166.840	153.800	10.432	10.432	–123.040	0.000	0.000	0.000
	900.00	20.786	169.288	155.388	12.510	12.510	–139.849	0.000	0.000	0.000
	1000.00	20.786	171.478	156.889	14.589	14.589	–156.889	0.000	0.000	0.000
	1100.00	20.786	173.459	158.307	16.667	16.667	–174.138	0.000	0.000	0.000
	1200.00	20.786	175.268	159.646	18.746	18.746	–191.575	0.000	0.000	0.000
	1300.00	20.786	176.932	160.913	20.825	20.825	–209.186	0.000	0.000	0.000
	1400.00	20.786	178.472	162.113	22.903	22.903	–226.958	0.000	0.000	0.000
	1500.00	20.786	179.906	163.252	24.982	24.982	–244.877	0.000	0.000	0.000
	1600.00	20.786	181.248	164.335	27.060	27.060	–262.936	0.000	0.000	0.000
	1700.00	20.786	182.508	165.367	29.139	29.139	–281.124	0.000	0.000	0.000
	1800.00	20.786	183.696	166.353	31.218	31.218	–299.435	0.000	0.000	0.000
	1900.00	20.786	184.820	167.295	33.296	33.296	–317.861	0.000	0.000	0.000
	2000.00	20.786	185.886	168.198	35.375	35.375	–336.397	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
SOL	298.15	26.067	29.874	29.874	0.000	0.000	-8.907	0.000	0.000	0.000
	300.00	26.100	30.035	29.874	0.048	0.048	-8.962	0.000	0.000	0.000
	400.00	28.467	37.878	30.927	2.780	2.780	-12.371	0.000	0.000	0.000
	500.00	30.863	44.465	32.992	5.737	5.737	-16.496	0.000	0.000	0.000
	600.00	34.772	50.419	35.405	9.008	9.008	-21.243	0.000	0.000	0.000
	700.00	30.835	55.546	37.938	12.326	12.326	-26.557	0.000	0.000	0.000
	800.00	31.129	59.675	40.403	15.418	15.418	-32.322	0.000	0.000	0.000
	900.00	31.966	63.386	42.753	18.569	18.569	-38.478	0.000	0.000	0.000
	1000.00	32.966	66.806	44.990	21.817	21.817	-44.990	0.000	0.000	0.000
	1100.00	33.927	69.993	47.120	25.161	25.161	-51.831	0.000	0.000	0.000
	1200.00	34.888	72.987	49.152	28.602	28.602	-58.982	0.000	0.000	0.000
	1300.00	35.723	75.814	51.095	32.135	32.135	-66.423	0.000	0.000	0.000
	1400.00	36.181	78.481	52.957	35.734	35.734	-74.139	0.000	0.000	0.000
	1500.00	36.192	80.978	54.743	39.354	39.354	-82.114	0.000	0.000	0.000
	1600.00	36.192	83.314	56.456	42.973	42.973	-90.330	0.000	0.000	0.000
	1700.00	36.192	85.508	58.101	46.592	46.592	-98.772	0.000	0.000	0.000
	1726.00	36.192	86.057	58.518	47.533	47.533	-101.002	0.000	0.000	0.000
LIQ			10.123		17.472					
	1726.00	43.095	96.180	58.518	65.005	65.005	-101.002	0.000	0.000	0.000
	1800.00	43.095	97.989	60.104	68.194	68.194	-108.187	0.000	0.000	0.000
	1900.00	43.095	100.319	62.160	72.503	72.503	-118.104	0.000	0.000	0.000
	2000.00	43.095	102.530	64.123	76.813	76.813	-128.247	0.000	0.000	0.000
	2100.00	43.095	104.633	66.003	81.122	81.122	-138.606	0.000	0.000	0.000
	2200.00	43.095	106.637	67.805	85.432	85.432	-149.170	0.000	0.000	0.000
	2300.00	43.095	108.553	69.535	89.742	89.742	-159.930	0.000	0.000	0.000
	2400.00	43.095	110.387	71.199	94.051	94.051	-170.878	0.000	0.000	0.000
	2500.00	43.095	112.146	72.802	98.361	98.361	-182.005	0.000	0.000	0.000
	2600.00	43.095	113.837	74.348	102.670	102.670	-193.305	0.000	0.000	0.000
	2700.00	43.095	115.463	75.841	106.980	106.980	-204.771	0.000	0.000	0.000
	2800.00	43.095	117.030	77.284	111.289	111.289	-216.396	0.000	0.000	0.000
	2900.00	43.095	118.543	78.681	115.599	115.599	-228.175	0.000	0.000	0.000
	3000.00	43.095	120.004	80.034	119.908	119.908	-240.103	0.000	0.000	0.000
	3100.00	43.095	121.417	81.346	124.218	124.218	-252.174	0.000	0.000	0.000
	3184.00	43.095	122.569	82.419	127.838	127.838	-262.422	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL	Hu1	Hu1	CURIE - PT= 631.
LIQ	Hu1	Hu1	BPT= 3184., L= 369.24 kJ

58.690

NICKEL (GAS)

Ni[g]

Phase	T [K]	C _p [J / (K mol)	S J / (K mol)	-(G-H298)/T [J / (K mol)	H [kJ / mol	H-H298 kJ / mol	G kJ / mol	ΔH _f kJ / mol	ΔG _f kJ / mol	log K _i [-]
GAS	298.15	23.362	182.189	182.189	430.115	0.000	375.795	430.115	384.702	-67.398
	300.00	23.370	182.333	182.189	430.158	0.043	375.458	430.110	384.421	-66.934
	400.00	23.883	189.125	183.112	432.520	2.405	356.870	429.740	369.241	-48.218
	500.00	24.368	194.508	184.871	434.934	4.819	337.680	429.197	354.175	-37.000
	600.00	24.732	198.985	186.861	437.390	7.275	317.999	428.381	339.242	-29.534
	700.00	24.940	202.816	188.873	439.875	9.760	297.904	427.549	324.461	-24.212
	800.00	24.980	206.150	190.829	442.372	12.257	277.452	426.954	309.774	-20.226
	900.00	24.921	209.090	192.698	444.868	14.753	256.687	426.298	295.165	-17.131
	1000.00	24.810	211.710	194.470	447.355	17.240	235.645	425.538	280.634	-14.659
	1100.00	24.668	214.068	196.147	449.829	19.714	214.354	424.667	266.185	-12.640
	1200.00	24.509	216.208	197.731	452.288	22.173	192.838	423.685	251.820	-10.961
	1300.00	24.341	218.163	199.228	454.730	24.615	171.118	422.596	237.542	-9.545
	1400.00	24.171	219.961	200.646	457.156	27.041	149.211	421.422	223.350	-8.333
	1500.00	24.001	221.623	201.990	459.564	29.449	127.131	420.211	209.244	-7.287
	1600.00	23.834	223.166	203.266	461.956	31.841	104.890	418.983	195.220	-6.373
	1700.00	23.673	224.606	204.479	464.331	34.216	82.501	417.740	181.273	-5.570
	1800.00	23.519	225.955	205.635	466.691	36.576	59.972	398.497	168.159	-4.880
	1900.00	23.372	227.223	206.738	469.035	38.920	37.312	396.532	155.416	-4.273
	2000.00	23.234	228.418	207.793	471.366	41.251	14.530	394.553	142.777	-3.729
	2100.00	23.106	229.548	208.802	473.683	43.568	-8.369	392.560	130.237	-3.239
	2200.00	22.987	230.621	209.769	475.987	45.872	-31.378	390.555	117.792	-2.797
	2300.00	22.878	231.640	210.698	478.280	48.165	-54.491	388.539	105.439	-2.395
	2400.00	22.780	232.611	211.591	480.563	50.448	-77.704	386.512	93.174	-2.028
	2500.00	22.692	233.540	212.451	482.837	52.722	-101.012	384.476	80.993	-1.692
	2600.00	22.615	234.428	213.279	485.102	54.987	-124.411	382.432	68.894	-1.384
	2700.00	22.549	235.280	214.078	487.360	57.245	-147.897	380.381	56.874	-1.100
	2800.00	22.494	236.099	214.850	489.612	59.497	-171.466	378.323	44.930	-0.838
	2900.00	22.450	236.888	215.597	491.859	61.744	-195.115	376.261	33.059	-0.595
	3000.00	22.418	237.648	216.319	494.103	63.988	-218.842	374.195	21.260	-0.370
	3100.00	22.397	238.383	217.019	496.343	66.228	-242.644	372.126	9.530	-0.161
	3200.00	22.387	239.094	217.698	498.582	68.467	-266.518	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

NiAs

NICKEL ARSENIDE

133.612

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
							kJ / mol			
SOL	298.15	56.001	45.380	45.380	-73.291	0.000	-86.821	-73.291	-67.268	11.785
	300.00	56.132	45.727	45.381	-73.187	0.104	-86.905	-73.281	-67.231	11.706
	400.00	60.959	62.622	47.652	-67.303	5.988	-92.352	-72.635	-65.307	8.528
	500.00	63.541	76.526	52.078	-61.067	12.224	-99.330	-71.923	-63.558	6.640
	600.00	65.238	88.269	57.157	-54.623	18.668	-107.585	-71.373	-61.941	5.392
	700.00	66.518	98.426	62.343	-48.033	25.258	-116.931	-70.778	-60.406	4.508
	800.00	67.576	107.379	67.424	-41.327	31.964	-127.230	-69.896	-58.984	3.851
	900.00	68.504	115.393	72.316	-34.522	38.769	-138.376	-69.025	-57.673	3.347
	1000.00	69.351	122.655	76.993	-27.629	45.662	-150.284	-68.189	-56.457	2.949
	1100.00	70.147	129.302	81.450	-20.654	52.637	-162.886	-67.396	-55.323	2.627
	1200.00	70.906	135.439	85.697	-13.601	59.690	-176.127	-66.735	-54.256	2.362
	1237.00	71.181	137.596	87.217	-10.972	62.319	-181.179	-66.556	-53.874	2.275

References

Phase	H / S	C _p	Remarks
SOL	S2	S2	Tk1 MPT= 1237.

Ni5As2

5-NICKEL 2-ARSENIDE

443.293

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
							kJ / mol			
SOL	298.15	215.983	190.631	190.631	-251.103	0.000	-307.940	-251.103	-242.114	42.417
	300.00	216.245	191.968	190.636	-250.703	0.400	-308.294	-251.036	-242.058	42.146
	400.00	226.587	255.742	199.261	-228.511	22.592	-330.807	-247.517	-239.605	31.289
	500.00	233.093	307.043	215.853	-205.508	45.595	-359.030	-244.430	-237.998	24.863
	600.00	238.089	349.997	234.727	-181.941	69.162	-391.939	-242.465	-236.922	20.626
	700.00	242.373	387.027	253.900	-157.914	93.189	-428.833	-240.380	-236.112	17.619
	800.00	246.276	419.650	272.619	-133.479	117.624	-469.198	-236.871	-235.740	15.392
	900.00	249.959	448.871	290.607	-108.666	142.437	-512.650	-233.379	-235.810	13.686
	1000.00	253.504	475.391	307.780	-83.492	167.611	-558.883	-230.062	-236.260	12.341
	1100.00	256.960	499.715	324.138	-57.968	193.135	-607.655	-226.936	-237.033	11.256
	1200.00	260.354	522.220	339.719	-32.102	219.001	-658.765	-224.176	-238.076	10.363
	1266.00	262.570	536.218	349.600	-14.845	236.258	-693.697	-222.711	-238.882	9.856

References

Phase	H / S	C _p	Remarks
SOL	S2	S2	S2/Tk2 MPT= 1266./1271.

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	552.005	468.880	468.880	–774.036	0.000	–913.833	–774.036	–762.628	133.609
	300.00	553.053	472.298	468.891	–773.014	1.022	–914.703	–773.773	–762.558	132.773
	400.00	592.360	637.449	491.141	–715.513	58.523	–970.492	–758.858	–761.044	99.382
	500.00	614.356	772.178	534.295	–655.094	118.942	–1041.183	–743.793	–763.348	79.746
	600.00	629.538	885.598	583.642	–592.863	181.173	–1124.221	–730.661	–768.543	66.908
	700.00	641.502	983.569	633.934	–529.292	244.744	–1217.790	–716.969	–775.824	57.893
	800.00	651.752	1069.913	683.141	–464.619	309.417	–1320.549	–699.973	–785.386	51.280
	900.00	661.005	1147.220	730.485	–398.974	375.062	–1431.472	–682.905	–797.091	46.262
	1000.00	669.638	1217.315	775.717	–332.438	441.598	–1549.753	–666.140	–810.679	42.346
	1100.00	677.867	1281.527	818.821	–265.060	508.976	–1674.739	–649.738	–825.931	39.220
	1103.00	678.110	1283.373	820.082	–263.026	511.010	–1678.587	–649.255	–826.413	39.136

References

Phase	H / S	C _p
SOL	S2	S2

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	265.413	344.803	344.803	–1849.244	0.000	–1952.047	–1849.244	–1659.377	290.716
	300.00	265.987	346.447	344.808	–1848.752	0.492	–1952.687	–1849.206	–1658.199	288.718
	400.00	289.050	426.429	355.557	–1820.895	28.349	–1991.467	–1846.442	–1594.915	208.275
	500.00	304.181	492.639	376.543	–1791.196	58.048	–2037.515	–1842.981	–1532.427	160.092
	600.00	316.190	549.190	400.717	–1760.160	89.084	–2089.674	–1839.643	–1470.638	128.030
	700.00	326.726	598.736	425.538	–1728.006	121.238	–2147.121	–1835.815	–1409.404	105.171
	800.00	336.476	643.007	450.003	–1694.841	154.403	–2209.246	–1830.739	–1348.829	88.069

References

Phase	H / S	C _p
SOL	G1	G1

NiB

NICKEL MONOBORIDE

69.501

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	34.633	30.125	30.125	-100.416	0.000	-109.398	-100.416	-98.753	17.301
	300.00	34.816	30.340	30.125	-100.352	0.064	-109.454	-100.421	-98.742	17.193
	400.00	41.751	41.418	31.589	-96.484	3.932	-113.052	-100.651	-98.148	12.817
	500.00	45.748	51.195	34.554	-92.095	8.321	-117.693	-100.948	-97.491	10.185
	600.00	48.588	59.799	38.059	-87.372	13.044	-123.251	-101.478	-96.754	8.423
	700.00	50.882	67.466	41.722	-82.396	18.020	-129.622	-101.973	-95.918	7.157
	800.00	52.884	74.393	45.380	-77.206	23.210	-136.720	-102.159	-95.039	6.205
	900.00	54.718	80.729	48.961	-71.824	28.592	-144.480	-102.311	-94.140	5.464
	1000.00	56.446	86.584	52.434	-66.265	34.151	-152.850	-102.462	-93.224	4.870
	1100.00	58.106	92.043	55.789	-60.537	39.879	-161.784	-102.608	-92.293	4.383
	1200.00	59.719	97.168	59.026	-54.646	45.770	-171.247	-102.747	-91.349	3.976
	1300.00	61.299	102.011	62.148	-48.595	51.821	-181.208	-102.869	-90.394	3.632

References

Phase	H / S	C _p	Remarks
SOL	Ku1	Ku1	Tk1 DPT= 1873. (LIQ + SOL)

Ni4B3

TETRANICKEL TRIBORIDE

267.193

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	128.123	114.642	114.642	-311.708	0.000	-345.888	-311.708	-305.046	53.443
	300.00	128.736	115.436	114.644	-311.470	0.238	-346.101	-311.726	-305.005	53.106
	400.00	152.014	156.038	120.022	-297.302	14.406	-359.717	-312.581	-302.635	39.520
	500.00	165.427	191.505	130.854	-281.382	30.326	-377.135	-313.679	-300.032	31.344
	600.00	174.957	222.547	143.604	-264.342	47.366	-397.870	-315.667	-297.136	25.868
	700.00	182.653	250.111	156.887	-246.451	65.257	-421.529	-317.509	-293.860	21.928
	800.00	189.372	274.947	170.117	-227.844	83.864	-447.802	-318.121	-290.437	18.964
	900.00	195.523	297.612	183.042	-208.595	103.113	-476.446	-318.624	-286.946	16.654
	1000.00	201.322	318.515	195.557	-188.751	122.957	-507.265	-319.157	-283.398	14.803
	1100.00	206.889	337.965	207.629	-168.339	143.369	-540.100	-319.713	-279.796	13.286
	1200.00	212.300	356.200	219.258	-147.378	164.330	-574.818	-320.283	-276.142	12.020
	1300.00	217.600	373.403	230.460	-125.882	185.826	-611.306	-320.841	-272.440	10.947
	1400.00	222.820	389.720	241.258	-103.861	207.847	-649.469	-321.287	-268.699	10.025

References

Phase	H / S	C _p	Remarks
SOL	Ku1	Ku1	Tk1 MPT= 1853.

138.594		NICKEL MONOBROMIDE (GAS)							NiBr[g]	
Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
GAS	298.15	36.172	262.484	262.484	184.096	0.000	105.836	184.096	137.434	–24.078
	300.00	36.218	262.708	262.485	184.163	0.067	105.351	184.045	137.145	–23.879
	400.00	37.846	273.382	263.929	187.877	3.781	78.524	167.786	124.804	–16.298
	500.00	38.645	281.922	266.702	191.706	7.610	50.745	166.812	114.167	–11.927
	600.00	39.118	289.012	269.846	195.596	11.500	22.188	165.571	103.749	–9.032
	700.00	39.436	295.068	273.027	199.524	15.428	–7.023	164.315	93.554	–6.981
	800.00	39.673	300.350	276.120	203.480	19.384	–36.800	163.304	83.514	–5.453
	900.00	39.861	305.034	279.077	207.457	23.361	–67.073	162.251	73.603	–4.272
	1000.00	40.020	309.242	281.887	211.451	27.355	–97.791	161.115	63.814	–3.333
	1100.00	40.160	313.063	284.550	215.461	31.365	–128.909	159.894	54.142	–2.571
	1200.00	40.286	316.563	287.074	219.483	35.387	–160.393	158.585	44.585	–1.941
	1300.00	40.404	319.792	289.468	223.518	39.422	–192.212	157.195	35.141	–1.412
	1400.00	40.514	322.791	291.742	227.564	43.468	–224.343	155.745	25.806	–0.963
	1500.00	40.619	325.589	293.907	231.620	47.524	–256.764	154.284	16.576	–0.577
	1600.00	40.721	328.214	295.970	235.687	51.591	–289.456	152.831	7.443	–0.243
	1700.00	40.820	330.686	297.940	239.764	55.668	–322.402	151.385	–1.599	0.049
	1800.00	40.916	333.022	299.825	243.851	59.755	–355.588	131.963	–9.797	0.284
	1900.00	41.011	335.237	301.631	247.947	63.851	–389.002	129.841	–17.615	0.484
	2000.00	41.104	337.343	303.364	252.053	67.957	–422.632	127.726	–25.321	0.661
References										
Phase	H / S	C _p								
GAS	Pa2	Pa2								

218.498		NICKEL BROMIDE							NiBr2	
Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	75.397	122.424	122.424	–211.878	0.000	–248.379	–211.878	–194.090	34.004
	300.00	75.440	122.890	122.425	–211.738	0.140	–248.606	–211.927	–193.980	33.775
	400.00	77.456	144.881	125.410	–204.090	7.788	–262.042	–241.492	–181.854	23.748
	500.00	79.175	162.352	131.110	–196.257	15.621	–277.433	–240.308	–167.084	17.455
	600.00	80.776	176.930	137.564	–188.259	23.619	–294.417	–239.300	–152.538	13.280
	700.00	82.323	189.499	144.106	–180.103	31.775	–312.752	–238.197	–138.154	10.309
	800.00	83.840	200.591	150.487	–171.795	40.083	–332.267	–236.729	–123.961	8.094
	900.00	85.340	210.552	156.616	–163.336	48.542	–352.833	–235.178	–109.958	6.382
	1000.00	86.830	219.621	162.470	–154.727	57.151	–374.348	–233.583	–96.129	5.021
	1100.00	88.312	227.966	168.050	–145.970	65.908	–396.733	–231.943	–82.463	3.916

References			
Phase	H / S	C _p	Remarks
SOL	Pa2	Pa2	Tk1 MPT= 1236. (p= 2.2 bar)

NiBr2[g]

NICKEL BROMIDE (GAS)

218.498

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	63.194	321.064	321.064	11.715	0.000	-84.010	11.715	-29.722	5.207
	300.00	63.248	321.455	321.065	11.832	0.117	-84.605	11.644	-29.979	5.220
	400.00	65.140	339.949	323.574	18.265	6.550	-117.715	-19.138	-37.527	4.901
	500.00	66.015	354.589	328.364	24.827	13.112	-152.467	-19.224	-42.118	4.400
	600.00	66.491	366.671	333.771	31.455	19.740	-188.548	-19.586	-46.669	4.063
	700.00	66.777	376.944	339.223	38.119	26.404	-225.741	-19.974	-51.143	3.816
	800.00	66.964	385.874	344.508	44.807	33.092	-263.892	-20.126	-55.585	3.629
	900.00	67.091	393.769	349.552	51.510	39.795	-302.882	-20.332	-60.006	3.483
	1000.00	67.182	400.842	354.333	58.224	46.509	-342.618	-20.631	-64.399	3.364
	1100.00	67.250	407.249	358.857	64.946	53.231	-383.028	-21.027	-68.758	3.265
	1200.00	67.301	413.103	363.137	71.674	59.959	-424.050	-21.520	-73.076	3.181
	1300.00	67.341	418.491	367.191	78.406	66.691	-465.633	-22.106	-77.349	3.108
	1400.00	67.373	423.483	371.035	85.142	73.427	-507.735	-22.761	-81.575	3.044
	1500.00	67.399	428.132	374.689	91.880	80.165	-550.318	-23.439	-85.752	2.986
	1600.00	67.420	432.483	378.166	98.621	86.906	-593.351	-24.119	-89.884	2.934
	1700.00	67.437	436.571	381.483	105.364	93.649	-636.806	-24.803	-93.973	2.887
	1800.00	67.452	440.426	384.651	112.108	100.393	-680.657	-43.474	-97.262	2.822
	1900.00	67.464	444.073	387.684	118.854	107.139	-724.884	-44.856	-100.213	2.755
	2000.00	67.474	447.534	390.590	125.601	113.886	-769.466	-46.241	-103.091	2.692

References

Phase	H / S	C _p
GAS	Pa2	Pa2

Ni3C

TRINICKEL CARBIDE

188.081

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	106.653	106.274	106.274	67.404	0.000	35.719	67.404	64.151	-11.239
	300.00	106.692	106.933	106.276	67.601	0.197	35.521	67.441	64.130	-11.166
	400.00	108.784	137.913	110.485	78.375	10.971	23.210	68.981	62.771	-8.197
	500.00	110.876	162.413	118.504	89.358	21.954	8.152	69.764	61.112	-6.384
	600.00	112.968	182.813	127.569	100.550	33.146	-9.137	69.561	59.381	-5.170
	700.00	115.060	200.384	136.744	111.952	44.548	-28.317	69.233	57.739	-4.309
	800.00	117.152	215.884	145.686	123.562	56.158	-49.145	69.642	56.069	-3.661

References

Phase	H / S	C _p
SOL	Nb1/e	e

118.699

NICKEL CARBONATE

NiCO3

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	86.191	86.190	86.190	–694.544	0.000	–720.242	–694.544	–617.876	108.249
	300.00	86.434	86.724	86.192	–694.384	0.160	–720.402	–694.530	–617.401	107.499
	400.00	96.325	113.068	89.717	–685.204	9.340	–730.431	–693.575	–591.827	77.285
	500.00	102.993	135.313	96.670	–675.222	19.322	–742.879	–692.469	–566.517	59.184
	600.00	108.393	154.581	104.751	–664.646	29.898	–757.395	–691.484	–541.423	47.135
	700.00	113.194	171.656	113.112	–653.563	40.981	–773.722	–690.379	–516.489	38.541

References

Phase	H / S	C _p
SOL	Tk1	Tk1,e

170.732

NICKEL TETRACARBONYL (GAS)

Ni(CO)4[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	149.285	410.602	410.602	–602.910	0.000	–725.331	–602.910	–587.249	102.884
	300.00	149.562	411.526	410.605	–602.634	0.276	–726.091	–602.854	–587.152	102.232
	400.00	160.375	456.184	416.620	–587.085	15.825	–769.558	–600.127	–582.346	76.047
	500.00	167.492	492.772	428.301	–570.675	32.235	–817.061	–598.116	–578.151	60.399
	600.00	173.173	523.828	441.699	–553.633	49.277	–867.929	–596.986	–574.279	49.995
	700.00	177.992	550.894	455.405	–536.068	66.842	–921.694	–596.360	–570.540	42.574
	800.00	182.133	574.939	468.872	–518.057	84.853	–978.008	–595.811	–566.892	37.014
	900.00	185.665	596.600	481.880	–499.662	103.248	–1036.602	–595.509	–563.298	32.693
	1000.00	188.618	616.320	494.353	–480.943	121.967	–1097.263	–595.439	–559.724	29.237
	1100.00	191.124	634.418	506.275	–461.952	140.958	–1159.812	–595.567	–556.148	26.409
	1200.00	193.239	651.141	517.659	–442.731	160.179	–1224.101	–595.867	–552.552	24.052
	1300.00	195.026	666.681	528.532	–423.315	179.595	–1290.001	–596.317	–548.926	22.056
	1400.00	196.543	681.191	538.924	–403.735	199.175	–1357.403	–596.879	–545.260	20.344
	1500.00	197.836	694.797	548.866	–384.014	218.896	–1426.209	–597.497	–541.551	18.858
	1600.00	198.947	707.601	558.391	–364.174	238.736	–1496.336	–598.146	–537.800	17.557
	1700.00	199.908	719.692	567.527	–344.230	258.680	–1567.706	–598.821	–534.008	16.408
	1800.00	200.743	731.142	576.301	–324.196	278.714	–1640.253	–617.503	–529.416	15.363
	1900.00	201.475	742.016	584.740	–304.085	298.825	–1713.915	–618.918	–524.484	14.419
	2000.00	202.120	752.367	592.864	–283.904	319.006	–1788.638	–620.361	–519.476	13.567

References

Phase	H / S	C _p
GAS	Nb1	Ja1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[—]
GAS	298.15	35.340	251.405	251.405	179.912	0.000	104.956	179.912	147.124	-25.775
	300.00	35.393	251.623	251.405	179.977	0.065	104.490	179.898	146.920	-25.581
	400.00	37.298	262.104	252.821	183.625	3.713	78.783	179.080	136.048	-17.766
	500.00	38.225	270.537	255.549	187.406	7.494	52.137	178.119	125.397	-13.100
	600.00	38.767	277.558	258.648	191.258	11.346	24.723	176.881	114.963	-10.008
	700.00	39.128	283.562	261.789	195.153	15.241	-3.340	175.621	104.753	-7.817
	800.00	39.391	288.805	264.845	199.080	19.168	-31.964	174.603	94.698	-6.183
	900.00	39.599	293.457	267.771	203.030	23.118	-61.082	173.539	84.773	-4.920
	1000.00	39.771	297.638	270.552	206.998	27.086	-90.640	172.389	74.971	-3.916
	1100.00	39.921	301.436	273.190	210.983	31.071	-120.597	171.153	65.288	-3.100
	1200.00	40.054	304.916	275.691	214.982	35.070	-150.917	169.828	55.722	-2.426
	1300.00	40.177	308.127	278.064	218.994	39.082	-181.571	168.421	46.270	-1.859
	1400.00	40.292	311.108	280.319	223.017	43.105	-212.534	166.954	36.928	-1.378
	1500.00	40.402	313.892	282.465	227.052	47.140	-243.786	165.476	27.692	-0.964
	1600.00	40.506	316.503	284.512	231.097	51.185	-275.307	164.004	18.555	-0.606
	1700.00	40.608	318.961	286.467	235.153	55.241	-307.081	162.539	9.509	-0.292
	1800.00	40.706	321.285	288.337	239.219	59.307	-339.095	143.097	1.309	-0.038
	1900.00	40.802	323.489	290.130	243.294	63.382	-371.334	140.955	-6.509	0.179
	2000.00	40.897	325.584	291.850	247.379	67.467	-403.789	138.818	-14.215	0.371

References

Phase	H / S	C _p
GAS	Pa2	Pa2

129.595

NICKEL CHLORIDE

NiCl2

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298 kJ / mol	G kJ / mol	ΔH _f kJ / mol	ΔG _f kJ / mol	log K _f [-]
SOL	298.15	71.681	98.006	98.006	-305.348	0.000	-334.568	-305.348	-259.139	45.400
	300.00	71.772	98.450	98.007	-305.215	0.133	-334.750	-305.326	-258.853	45.070
	400.00	75.425	119.646	100.873	-297.839	7.509	-345.697	-304.149	-243.539	31.803
	500.00	77.821	136.747	106.392	-290.170	15.178	-358.544	-303.008	-228.520	23.873
	600.00	79.721	151.108	112.680	-282.291	23.057	-372.956	-302.035	-213.719	18.606
	700.00	81.388	163.525	119.076	-274.234	31.114	-388.701	-300.972	-199.072	14.855
	800.00	82.931	174.494	125.331	-266.017	39.331	-405.613	-299.553	-184.610	12.054
	900.00	84.401	184.348	131.350	-257.650	47.698	-423.563	-298.063	-170.332	9.886
	1000.00	85.826	193.314	137.105	-249.138	56.210	-442.453	-296.540	-156.221	8.160
	1100.00	87.222	201.560	142.594	-240.486	64.862	-462.202	-294.986	-142.264	6.756
	1200.00	88.597	209.208	147.831	-231.695	73.653	-482.745	-293.400	-128.450	5.591
	1300.00	89.959	216.354	152.830	-222.767	82.581	-504.027	-291.777	-114.769	4.611
	1304.00	90.013	216.630	153.025	-222.407	82.941	-504.893	-291.711	-114.225	4.576
			59.253		77.266					
LIQ	1304.00	99.998	275.883	153.025	-145.141	160.207	-504.893	-214.445	-114.225	4.576
	1400.00	99.998	282.987	161.696	-135.541	169.807	-531.723	-211.932	-106.937	3.990

References

Phase	H / S	C _p	Remarks
SOL	Pa2	Pa2	SPT= 1229., L= 220.5 kJ
LIQ	Pa2	Pa2	

NiCl₂[g]**NICKEL CHLORIDE (GAS)**

129.595

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H ₂₉₈)/T [—————]	H [—————]	H-H ₂₉₈ kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	60.613	298.228	298.228	-70.291	0.000	-159.208	-70.291	-83.779	14.678
	300.00	60.702	298.603	298.229	-70.179	0.112	-159.760	-70.290	-83.862	14.602
	400.00	63.796	316.555	300.656	-63.931	6.360	-190.553	-70.241	-88.396	11.543
	500.00	65.176	330.958	305.324	-57.474	12.817	-222.953	-70.312	-92.930	9.708
	600.00	65.881	342.910	310.621	-50.918	19.373	-256.664	-70.662	-97.426	8.482
	700.00	66.268	353.097	315.979	-44.309	25.982	-291.476	-71.047	-101.847	7.600
	800.00	66.485	361.961	321.185	-37.670	32.621	-327.239	-71.206	-106.237	6.937
	900.00	66.603	369.800	326.160	-31.015	39.276	-363.835	-71.428	-110.603	6.419
	1000.00	66.660	376.820	330.881	-24.351	45.940	-401.172	-71.753	-114.940	6.004
	1100.00	66.677	383.175	335.350	-17.684	52.607	-439.177	-72.184	-119.238	5.662
	1200.00	66.666	388.976	339.581	-11.017	59.274	-477.788	-72.722	-123.493	5.376
	1300.00	66.637	394.311	343.589	-4.352	65.939	-516.956	-73.362	-127.699	5.131
	1400.00	66.593	399.248	347.390	2.310	72.601	-556.637	-74.081	-131.852	4.919
	1500.00	66.539	403.841	351.002	8.967	79.258	-596.794	-74.832	-135.952	4.734
	1600.00	66.478	408.133	354.440	15.618	85.909	-637.395	-75.597	-140.002	4.571
	1700.00	66.410	412.161	357.718	22.262	92.553	-678.412	-76.374	-144.004	4.425
	1800.00	66.337	415.955	360.849	28.899	99.190	-719.820	-95.149	-147.199	4.272
	1900.00	66.261	419.540	363.845	35.529	105.820	-761.596	-96.647	-150.050	4.125
	2000.00	66.182	422.937	366.715	42.152	112.443	-803.722	-98.159	-152.822	3.991

References

Phase	H / S	C _p
GAS	Pa2	Pa2

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	32.614	239.639	239.639	104.600	0.000	33.152	104.600	72.290	–12.665
	300.00	32.691	239.841	239.640	104.660	0.060	32.708	104.583	72.090	–12.552
	400.00	35.446	249.676	240.962	108.086	3.486	8.215	103.670	61.395	–8.017
	500.00	36.812	257.748	243.537	111.705	7.105	–17.169	102.651	50.940	–5.322
	600.00	37.630	264.537	246.486	115.430	10.830	–43.292	101.368	40.713	–3.544
	700.00	38.191	270.382	249.492	119.223	14.623	–70.045	100.068	30.716	–2.292
	800.00	38.614	275.510	252.431	123.064	18.464	–97.344	99.014	20.881	–1.363
	900.00	38.956	280.079	255.253	126.943	22.343	–125.128	97.918	11.179	–0.649
	1000.00	39.249	284.199	257.945	130.854	26.254	–153.345	96.741	1.604	–0.084
	1100.00	39.510	287.952	260.505	134.792	30.192	–181.956	95.481	–7.850	0.373
	1200.00	39.748	291.400	262.938	138.755	34.155	–210.926	94.139	–17.185	0.748
	1300.00	39.971	294.591	265.252	142.741	38.141	–240.227	92.719	–26.405	1.061
	1400.00	40.183	297.561	267.455	146.749	42.149	–269.836	91.246	–35.513	1.325
	1500.00	40.386	300.340	269.555	150.777	46.177	–299.733	89.767	–44.516	1.550
	1600.00	40.583	302.953	271.562	154.826	50.226	–329.899	88.301	–53.420	1.744
	1700.00	40.775	305.419	273.481	158.894	54.294	–360.319	86.849	–62.233	1.912
	1800.00	40.963	307.755	275.321	162.980	58.380	–390.978	85.313	–70.201	2.037
	1900.00	41.148	309.975	277.087	167.086	62.486	–421.866	83.713	–77.790	2.139
	2000.00	41.330	312.090	278.785	171.210	66.610	–452.970	82.011	–85.267	2.227

References

Phase	H / S	C _p
GAS	Pa2	Pa2

NiF2

NICKEL FLUORIDE

96.687

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f kJ / mol	ΔG _f kJ / mol	log K _f [—]
SOL	298.15	64.025	73.597	73.597	-657.725	0.000	-679.668	-657.725	-610.298	106.922
	300.00	64.220	73.993	73.598	-657.606	0.119	-679.804	-657.713	-610.003	106.211
	400.00	69.152	93.319	76.200	-650.877	6.848	-688.205	-656.929	-594.217	77.597
	500.00	71.168	108.976	81.240	-643.857	13.868	-698.345	-656.229	-578.623	60.448
	600.00	73.019	122.116	86.986	-636.647	21.078	-709.917	-655.764	-563.151	49.027
	700.00	74.798	133.507	92.836	-629.256	28.469	-722.710	-655.239	-547.746	40.873
	800.00	76.415	143.602	98.563	-621.693	36.032	-736.575	-654.375	-532.447	34.765
	900.00	77.867	152.688	104.080	-613.978	43.747	-751.397	-653.459	-517.261	30.021
	1000.00	79.235	160.963	109.361	-606.123	51.602	-767.086	-652.532	-502.178	26.231
	1100.00	80.658	168.580	114.403	-598.129	59.596	-783.568	-651.589	-487.188	23.135
	1200.00	82.315	175.667	119.216	-589.983	67.742	-800.784	-650.612	-472.285	20.558
	1300.00	84.406	182.335	123.817	-581.652	76.073	-818.687	-649.560	-457.466	18.381
	1400.00	87.149	188.686	128.225	-573.081	84.644	-837.241	-648.351	-442.734	16.519
	1500.00	90.770	194.816	132.461	-564.193	93.532	-856.417	-646.859	-428.097	14.908
	1600.00	95.506	200.819	136.547	-554.889	102.836	-876.199	-644.965	-413.572	13.502

References

Phase	H / S	C _p	Remarks
SOL	Pa2	Pa2	Tk1 MPT= 1747.

96.687

NICKELFLUORIDE (GAS)

NiF2[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
GAS	298.15	52.544	273.065	273.065	–335.557	0.000	–416.971	–335.557	–347.601	60.898
	300.00	52.613	273.390	273.066	–335.460	0.097	–417.477	–335.566	–347.676	60.536
	400.00	56.630	289.081	275.178	–329.996	5.561	–445.628	–336.048	–351.640	45.919
	500.00	59.747	302.074	279.295	–324.167	11.390	–475.204	–336.539	–355.482	37.137
	600.00	61.857	313.167	284.038	–318.080	17.477	–505.980	–337.196	–359.214	31.272
	700.00	63.267	322.815	288.904	–311.819	23.738	–537.790	–337.803	–362.825	27.074
	800.00	64.199	331.328	293.685	–305.443	30.114	–570.505	–338.125	–366.378	23.922
	900.00	64.800	338.928	298.298	–298.990	36.567	–604.025	–338.471	–369.889	21.468
	1000.00	65.164	345.775	302.709	–292.490	43.067	–638.266	–338.899	–373.358	19.502
	1100.00	65.353	351.996	306.911	–285.963	49.594	–673.159	–339.423	–376.779	17.892
	1200.00	65.414	357.686	310.909	–279.424	56.133	–708.647	–340.053	–380.148	16.547
	1300.00	65.383	362.921	314.711	–272.884	62.673	–744.681	–340.792	–383.460	15.408
	1400.00	65.288	367.764	318.330	–266.350	69.207	–781.219	–341.620	–386.712	14.428
	1500.00	65.151	372.263	321.777	–259.827	75.730	–818.223	–342.494	–389.902	13.578
	1600.00	64.994	376.463	325.065	–253.320	82.237	–855.661	–343.396	–393.034	12.831
	1700.00	64.835	380.399	328.206	–246.829	88.728	–893.506	–344.325	–396.108	12.171
	1800.00	64.691	384.100	331.209	–240.353	95.204	–931.733	–363.264	–398.366	11.560
	1900.00	64.578	387.595	334.086	–233.889	101.668	–970.320	–364.933	–400.271	11.004
	2000.00	64.511	390.905	336.845	–227.435	108.122	–1009.246	–366.621	–402.087	10.501

References

Phase	H / S	C _p
GAS	Pa2	Pa2

NiI[g]
NICKEL MONOIODIDE (GAS)
185.594

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	36.626	270.220	270.220	246.856	0.000	166.290	246.856	192.511	-33.727
	300.00	36.666	270.447	270.221	246.924	0.068	165.790	246.825	192.174	-33.460
	400.00	38.102	281.219	271.680	250.672	3.816	138.184	237.022	174.498	-22.787
	500.00	38.812	289.806	274.476	254.521	7.665	109.618	213.818	161.126	-16.833
	600.00	39.237	296.922	277.641	258.425	11.569	80.272	212.575	150.699	-13.119
	700.00	39.527	302.994	280.840	262.364	15.508	50.268	211.315	140.495	-10.484
	800.00	39.746	308.287	283.947	266.328	19.472	19.699	210.301	130.447	-8.517
	900.00	39.922	312.979	286.917	270.312	23.456	-11.369	209.243	120.528	-6.995
	1000.00	40.073	317.193	289.737	274.312	27.456	-42.881	208.101	110.731	-5.784
	1100.00	40.206	321.019	292.410	278.326	31.470	-74.795	206.874	101.053	-4.799
	1200.00	40.328	324.522	294.942	282.353	35.497	-107.074	205.559	91.490	-3.982
	1300.00	40.442	327.755	297.343	286.391	39.535	-139.690	204.161	82.041	-3.296
	1400.00	40.550	330.756	299.624	290.441	43.585	-172.618	202.704	72.701	-2.713
	1500.00	40.654	333.557	301.794	294.501	47.645	-205.835	201.235	63.467	-2.210
	1600.00	40.754	336.184	303.862	298.572	51.716	-239.323	199.773	54.330	-1.774
	1700.00	40.852	338.658	305.837	302.652	55.796	-273.066	198.319	45.284	-1.391
	1800.00	40.948	340.996	307.726	306.742	59.886	-307.050	178.887	37.084	-1.076
	1900.00	41.042	343.212	309.536	310.841	63.985	-341.262	176.755	29.264	-0.805
	2000.00	41.135	345.320	311.272	314.950	68.094	-375.689	174.630	21.557	-0.563

References

Phase	H / S	C _p
GAS	Pa2	Pa2

NiI2
NICKEL IODIDE
312.499

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	77.404	138.700	138.700	-78.199	0.000	-119.552	-78.199	-76.018	13.318
	300.00	77.465	139.179	138.701	-78.056	0.143	-119.809	-78.205	-76.004	13.233
	400.00	79.834	161.826	141.773	-70.178	8.021	-134.908	-94.698	-74.651	9.748
	500.00	81.229	179.801	147.643	-62.120	16.079	-152.020	-137.790	-65.500	6.843
	600.00	82.240	194.704	154.279	-53.944	24.255	-170.767	-136.637	-51.156	4.454

References

Phase	H / S	C _p	Remarks
SOL	Nb1/Pa2	e	Ku1 MPT= 1070.

74.689		NICKEL OXIDE								NiO
Phase	T [K]	C _p [J / (K mol)	S J / (K mol)	-(G-H298)/T [kJ / mol	H [kJ / mol	H-H298 [kJ / mol	G [kJ / mol	ΔH _f [kJ / mol	ΔG _f [kJ / mol	log K _f [-]
SOL-A	298.15	44.309	37.991	37.991	-239.701	0.000	-251.028	-239.701	-211.539	37.061
	300.00	44.476	38.265	37.992	-239.619	0.082	-251.098	-239.694	-211.364	36.802
	400.00	51.505	52.041	39.824	-234.814	4.887	-255.631	-239.107	-201.998	26.378
	500.00	64.978	64.746	43.536	-229.096	10.605	-261.469	-237.875	-192.842	20.146
	525.00	70.752	68.051	44.624	-227.402	12.299	-263.129	-237.353	-190.603	18.964
SOL-B			0.000		0.000					
	525.00	54.686	68.051	44.624	-227.402	12.299	-263.129	-237.353	-190.603	18.964
	565.00	61.422	72.311	46.433	-225.080	14.621	-265.935	-236.961	-187.054	17.293
SOL-C			0.000		0.000					
	565.00	53.761	72.311	46.433	-225.080	14.621	-265.935	-236.961	-187.054	17.293
	600.00	53.646	75.538	48.037	-223.200	16.501	-268.523	-236.831	-183.967	16.016
	700.00	53.380	83.786	52.571	-217.850	21.851	-276.501	-236.425	-175.180	13.072
	800.00	53.345	90.909	56.928	-212.516	27.185	-285.243	-235.852	-166.471	10.869
	900.00	53.604	97.204	61.060	-207.171	32.530	-294.655	-235.361	-157.828	9.160
	1000.00	54.154	102.877	64.962	-201.786	37.915	-304.663	-234.954	-149.236	7.795
	1100.00	54.959	108.075	68.649	-196.332	43.369	-315.214	-234.599	-140.682	6.680
	1200.00	55.970	112.899	72.137	-190.787	48.914	-326.266	-234.270	-132.158	5.753
	1300.00	57.128	117.424	75.449	-185.133	54.568	-337.784	-233.940	-123.662	4.969
	1400.00	58.369	121.703	78.601	-179.359	60.342	-349.742	-233.572	-115.193	4.298
	1500.00	59.627	125.773	81.611	-173.459	66.242	-362.118	-233.112	-106.753	3.717
	1600.00	60.832	129.660	84.494	-167.435	72.266	-374.891	-232.541	-98.347	3.211
	1700.00	61.915	133.381	87.261	-161.297	78.404	-388.044	-231.867	-89.980	2.765
	1800.00	62.805	136.946	89.923	-155.059	84.642	-401.562	-249.089	-80.895	2.348
	1900.00	63.431	140.360	92.488	-148.744	90.957	-415.428	-248.954	-71.554	1.967
	2000.00	63.722	143.623	94.964	-142.384	97.317	-429.629	-248.784	-62.222	1.625
	2100.00	63.604	146.731	97.356	-136.014	103.687	-444.148	-248.617	-52.898	1.316
	2200.00	63.006	149.678	99.668	-129.679	110.022	-458.970	-248.495	-43.581	1.035
	2228.00	62.742	150.473	100.301	-127.918	111.783	-463.172	-248.477	-40.973	0.961
LIQ			24.413		54.392					
	2228.00	54.392	174.886	100.301	-73.526	166.175	-463.172	-194.085	-40.973	0.961
	2300.00	54.392	176.616	102.663	-69.610	170.091	-475.826	-194.651	-36.016	0.818
	2400.00	54.392	178.931	105.793	-64.171	175.530	-493.604	-195.448	-29.102	0.633
	2500.00	54.392	181.151	108.763	-58.732	180.969	-511.609	-196.256	-22.154	0.463

References

Phase	H / S	C _p
SOL-A	Nb1	Pa1
SOL-B	Pa1	Pa1
SOL-C	Pa1	Pa1
LIQ	e	e

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol)]	[————— J / (K mol)]	[————— J / (K mol)]	[————— kJ / mol]	[————— kJ / mol]	[————— kJ / mol]	[————— kJ / mol]	[————— kJ / mol]	[—]
GAS	298.15	33.849	241.359	241.359	309.616	0.000	237.655	309.616	277.144	-48.554
	300.00	33.931	241.569	241.360	309.679	0.063	237.208	309.603	276.943	-48.220
	400.00	36.863	251.789	242.733	313.238	3.622	212.523	308.945	266.155	-34.756
	500.00	38.303	260.185	245.410	317.004	7.388	186.911	308.225	255.538	-26.696
	600.00	39.155	267.250	248.477	320.880	11.264	160.530	307.249	245.086	-21.337
	700.00	39.731	273.331	251.603	324.826	15.210	133.494	306.251	234.814	-17.522
	800.00	40.158	278.665	254.659	328.821	19.205	105.889	305.485	224.661	-14.669
	900.00	40.499	283.416	257.595	332.854	23.238	77.780	304.665	214.607	-12.455
	1000.00	40.787	287.698	260.395	336.919	27.303	49.221	303.751	204.648	-10.690
	1100.00	41.040	291.598	263.057	341.011	31.395	20.253	302.743	194.786	-9.250
	1200.00	41.270	295.179	265.587	345.126	35.510	-9.088	301.644	185.020	-8.054
	1300.00	41.483	298.490	267.992	349.264	39.648	-38.773	300.457	175.348	-7.046
	1400.00	41.683	301.572	270.282	353.422	43.806	-68.778	299.209	165.771	-6.185
	1500.00	41.875	304.454	272.465	357.600	47.984	-99.081	297.948	156.284	-5.442
	1600.00	42.059	307.163	274.550	361.797	52.181	-129.663	296.692	146.881	-4.795
	1700.00	42.239	309.718	276.544	366.012	56.396	-160.509	295.442	137.556	-4.227
	1800.00	42.414	312.137	278.455	370.245	60.629	-191.602	276.214	129.064	-3.745
	1900.00	42.586	314.435	280.288	374.495	64.879	-222.932	274.285	120.942	-3.325
	2000.00	42.756	316.624	282.051	378.762	69.146	-254.486	272.361	112.921	-2.949

References

Phase	H / S	C _p
GAS	Pa1	Pa1

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	131.567	98.324	98.324	-1915.900	0.000	-1945.215	-1915.900	-1797.119	314.848
	300.00	132.036	99.139	98.327	-1915.656	0.244	-1945.398	-1915.903	-1796.382	312.778
	400.00	149.320	139.799	103.753	-1901.482	14.418	-1957.401	-1915.416	-1756.586	229.387
	500.00	158.574	174.199	114.496	-1886.049	29.851	-1973.148	-1914.339	-1716.998	179.374
	600.00	164.667	203.680	126.962	-1869.869	46.031	-1992.077	-1913.261	-1677.635	146.051
	700.00	169.268	229.422	139.799	-1853.164	62.736	-2013.759	-1912.116	-1638.444	122.262
	800.00	173.074	252.280	152.457	-1836.042	79.858	-2037.866	-1910.764	-1599.442	104.433
	900.00	176.417	272.861	164.711	-1818.564	97.336	-2064.140	-1909.625	-1560.598	90.575
	1000.00	179.473	291.609	176.477	-1800.768	115.132	-2092.377	-1929.890	-1520.347	79.415
	1100.00	182.341	308.850	187.738	-1782.676	133.224	-2122.411	-1928.511	-1479.459	70.254
	1200.00	185.082	324.834	198.504	-1764.304	151.596	-2154.105	-1927.027	-1438.701	62.625
	1300.00	187.732	339.754	208.802	-1745.663	170.237	-2187.343	-1925.434	-1398.070	56.175
	1400.00	190.318	353.761	218.661	-1726.760	189.140	-2222.026	-1923.707	-1357.568	50.651
	1500.00	192.855	366.979	228.112	-1707.601	208.299	-2258.069	-1921.799	-1317.195	45.869
	1600.00	195.355	379.505	237.186	-1688.190	227.710	-2295.398	-1919.691	-1276.955	41.688
	1700.00	197.827	391.423	245.911	-1668.531	247.369	-2333.949	-1917.385	-1236.854	38.004
	1800.00	200.276	402.800	254.314	-1648.626	267.274	-2373.665	-1932.863	-1196.134	34.711
	1900.00	202.708	413.693	262.417	-1628.476	287.424	-2414.493	-1930.852	-1155.259	31.760
	2000.00	205.126	424.152	270.244	-1608.084	307.816	-2456.389	-1928.645	-1114.494	29.108

References

Phase	H / S	C _p	Remarks
SOL	Nb1/e	e	Tk1 MPT= 2383.

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[— —]
SOL	298.15	142.503	110.039	110.039	-1403.439	0.000	-1436.247	-1403.439	-1290.493	226.089
	300.00	142.885	110.922	110.042	-1403.175	0.264	-1436.452	-1403.417	-1289.792	224.573
	400.00	157.295	154.240	115.850	-1388.083	15.356	-1449.779	-1401.854	-1252.137	163.512
	500.00	165.534	190.289	127.237	-1371.913	31.526	-1467.057	-1399.994	-1214.922	126.922
	600.00	171.451	221.014	140.369	-1355.051	48.388	-1487.660	-1398.371	-1178.068	102.560
	700.00	176.365	247.821	153.844	-1337.655	65.784	-1511.130	-1396.567	-1141.472	85.178
	800.00	180.827	271.666	167.109	-1319.793	83.646	-1537.126	-1394.073	-1105.197	72.162
	900.00	185.099	293.212	179.942	-1301.496	101.943	-1565.387	-1391.450	-1069.245	62.057
	1000.00	189.322	312.933	192.269	-1282.775	120.664	-1595.708	-1388.757	-1033.588	53.989
	1100.00	193.572	331.176	204.077	-1263.631	139.808	-1627.924	-1385.976	-998.204	47.401
	1200.00	197.899	348.204	215.386	-1244.058	159.381	-1661.902	-1383.082	-963.079	41.922
	1300.00	202.330	364.218	226.225	-1224.048	179.391	-1697.531	-1380.044	-928.201	37.296
	1400.00	206.887	379.378	236.628	-1203.588	199.851	-1734.718	-1376.794	-893.564	33.339
	1500.00	211.582	393.811	246.629	-1182.666	220.773	-1773.383	-1373.217	-859.170	29.919
	1600.00	216.424	407.620	256.263	-1161.267	242.172	-1813.459	-1369.256	-825.027	26.934
	1700.00	221.421	420.890	265.559	-1139.376	264.063	-1854.889	-1415.071	-790.698	24.295
	1800.00	226.576	433.691	274.546	-1116.977	286.462	-1897.621	-1446.028	-752.592	21.840
	1818.00	227.522	435.951	276.133	-1112.890	290.549	-1905.448	-1445.325	-745.662	21.424

References

Phase	H / S	C _p	Remarks
SOL	S5	S5	S5 MPT= 1818.

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [————— kJ / mol —————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
SOL	298.15	99.252	85.772	85.772	–1202.440	0.000	–1228.013	–1202.440	–1118.188	195.902
	300.00	99.535	86.387	85.774	–1202.256	0.184	–1228.172	–1202.432	–1117.666	194.603
	400.00	110.041	116.644	89.828	–1191.714	10.726	–1238.371	–1201.668	–1089.510	142.275
	500.00	115.763	141.864	97.786	–1180.401	22.039	–1251.333	–1200.600	–1061.593	110.904
	600.00	119.601	163.328	106.965	–1168.622	33.818	–1266.619	–1199.617	–1033.887	90.008
	700.00	122.550	181.994	116.379	–1156.509	45.931	–1283.906	–1198.576	–1006.338	75.094
	800.00	125.025	198.524	125.634	–1144.128	58.312	–1302.947	–1197.263	–978.965	63.920
	900.00	127.224	213.379	134.572	–1131.514	70.926	–1323.555	–1195.989	–951.755	55.238
	1000.00	129.252	226.890	143.138	–1118.689	83.751	–1345.578	–1194.799	–924.682	48.300
	1100.00	131.168	239.299	151.324	–1105.667	96.773	–1368.896	–1193.691	–897.725	42.629
	1200.00	133.009	250.792	159.140	–1092.458	109.982	–1393.408	–1196.657	–870.746	37.903
	1300.00	134.795	261.509	166.607	–1079.067	123.373	–1419.029	–1195.160	–843.647	33.898
	1400.00	136.543	271.562	173.748	–1065.500	136.940	–1445.687	–1193.662	–816.664	30.470
	1500.00	138.262	281.042	180.588	–1051.759	150.681	–1473.322	–1192.120	–789.789	27.503
	1600.00	139.959	290.019	187.149	–1037.848	164.592	–1501.879	–1190.523	–763.019	24.910
	1700.00	141.639	298.555	193.454	–1023.768	178.672	–1531.311	–1188.878	–736.350	22.625

References

Phase	H / S	C _p	Remarks
SOL	Tk1	e	Tk1 MPT= 2048.

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [————— kJ / mol —————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
SOL	298.15	64.809	77.404	77.404	–184.096	0.000	–207.174	–184.096	–177.115	31.030
	300.00	64.852	77.805	77.405	–183.976	0.120	–207.318	–184.117	–177.072	30.831
	400.00	67.153	96.777	79.976	–177.376	6.720	–216.087	–186.232	–174.345	22.767
	500.00	69.454	112.009	84.908	–170.545	13.551	–226.550	–187.947	–171.180	17.883
	600.00	71.756	124.875	90.524	–163.485	20.611	–238.410	–190.062	–167.637	14.594
	700.00	74.057	136.109	96.250	–156.194	27.902	–251.471	–192.039	–163.722	12.217
	800.00	76.358	146.149	101.870	–148.674	35.422	–265.592	–193.336	–159.586	10.420
	900.00	78.659	155.275	107.305	–140.923	43.173	–280.670	–194.520	–155.295	9.013
	1000.00	80.960	163.682	112.527	–132.942	51.154	–296.623	–195.666	–150.875	7.881
	1100.00	83.262	171.506	117.537	–124.731	59.365	–313.387	–196.777	–146.342	6.949
	1200.00	85.563	178.849	122.344	–116.289	67.807	–330.909	–261.421	–140.620	6.121
	1300.00	87.864	185.789	126.960	–107.618	76.478	–349.144	–261.673	–130.543	5.245
	1383.00	89.774	191.285	130.656	–100.246	83.850	–364.794	–261.816	–122.166	4.614

References

Phase	H / S	C _p	Remarks
SOL	Tk1/Ku1	e	Tk1 MPT= 1383.

Ni3P

TRINICKEL PHOSPHIDE

207.044

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	87.802	106.274	106.274	-219.660	0.000	-251.345	-219.660	-212.380	37.208
	300.00	87.864	106.817	106.275	-219.498	0.162	-251.543	-219.686	-212.335	36.971
	400.00	91.211	132.552	109.762	-210.544	9.116	-263.565	-222.181	-209.452	27.352
	500.00	94.558	153.265	116.456	-201.255	18.405	-277.888	-224.394	-206.022	21.523
	600.00	97.906	170.801	124.088	-191.632	28.028	-294.113	-227.218	-202.096	17.594
	700.00	101.253	186.144	131.879	-181.674	37.986	-311.975	-229.844	-197.669	14.750
	800.00	104.600	199.883	139.535	-171.382	48.278	-331.288	-231.462	-192.960	12.599
	900.00	107.947	212.397	146.946	-160.754	58.906	-351.911	-232.921	-188.058	10.915
	1000.00	111.294	223.943	154.075	-149.792	69.868	-373.735	-234.333	-182.998	9.559
	1100.00	114.642	234.708	160.922	-138.495	81.165	-396.674	-235.703	-177.797	8.443
	1200.00	117.989	244.826	167.496	-126.864	92.796	-420.656	-300.598	-171.385	7.460
	1243.00	119.428	249.006	170.244	-121.759	97.901	-431.273	-300.818	-166.751	7.007

References

Phase	H / S	C _p	Remarks
SOL	Tk1/Ku1	e	Tk1 DPT= 1243. (LIQ + Ni5P2)

Ni5P2

PENTANICKEL DIPHOSPHIDE

355.398

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	151.984	184.933	184.933	-435.136	0.000	-490.274	-435.136	-421.249	73.801
	300.00	152.088	185.873	184.936	-434.855	0.281	-490.617	-435.184	-421.163	73.331
	400.00	157.737	230.400	190.969	-419.363	15.773	-511.523	-439.857	-415.670	54.281
	500.00	163.385	266.205	202.547	-403.307	31.829	-536.410	-443.848	-409.174	42.746
	600.00	169.034	296.493	215.743	-386.686	48.450	-564.582	-448.850	-401.793	34.979
	700.00	174.682	322.973	229.209	-369.501	65.635	-595.582	-453.515	-393.527	29.365
	800.00	180.330	346.668	242.435	-351.750	83.386	-629.084	-456.492	-384.749	25.122
	900.00	185.979	368.234	255.232	-333.435	101.701	-664.845	-459.198	-375.617	21.800
	1000.00	191.627	388.121	267.539	-314.554	120.582	-702.675	-461.820	-366.189	19.128
	1100.00	197.276	406.650	279.353	-295.109	140.027	-742.424	-464.363	-356.502	16.929
	1200.00	202.924	424.057	290.693	-275.099	160.037	-783.968	-593.966	-344.409	14.992
	1300.00	208.572	440.523	301.591	-254.524	180.612	-827.204	-594.769	-323.579	13.002
	1400.00	214.221	456.186	312.078	-233.385	201.751	-872.046	-595.353	-302.694	11.294
	1453.00	217.214	464.202	317.482	-221.952	213.184	-896.437	-595.488	-291.612	10.483

References

Phase	H / S	C _p	Remarks
SOL	Tk1/Ku1	e	Tk1 TPT= 1298. /MPT= 1453.

85.625

NICKEL 0.84–SULFIDE

NiS0.84

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
							kJ / mol			
SOL	298.15	43.093	48.953	48.953	–82.425	0.000	–97.020	–82.425	–80.085	14.031
	300.00	43.137	49.219	48.954	–82.345	0.080	–97.111	–82.429	–80.071	13.942
	400.00	45.522	61.956	50.674	–77.912	4.513	–102.695	–84.576	–79.171	10.339
	500.00	47.907	72.370	54.002	–73.241	9.184	–109.426	–86.139	–77.658	8.113
	600.00	50.292	81.315	57.825	–68.331	14.094	–117.120	–87.505	–75.829	6.601
	700.00	52.677	89.247	61.758	–63.183	19.242	–125.655	–88.453	–73.794	5.507
	800.00	55.061	96.436	65.650	–57.796	24.629	–134.945	–88.981	–71.663	4.679
	833.00	55.848	98.678	66.914	–55.966	26.459	–138.164	–89.150	–70.945	4.449

References

Phase	H / S	C _p	Remarks
SOL	Mi1	Mi1	Mi1 Ni7S6–Ni6S5, DPT= 833.

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL-B	298.15	47.116	53.011	53.011	-87.864	0.000	-103.669	-87.864	-85.205	14.928
	300.00	47.191	53.303	53.012	-87.777	0.087	-103.768	-87.867	-85.188	14.833
	400.00	50.501	67.362	54.907	-82.882	4.982	-109.827	-90.286	-84.178	10.993
	500.00	53.053	78.913	58.586	-77.701	10.163	-117.157	-91.963	-82.480	8.617
	600.00	55.313	88.788	62.816	-72.281	15.583	-125.554	-93.391	-80.444	7.003
	652.00	56.429	93.431	65.075	-69.375	18.489	-130.293	-94.032	-79.293	6.352
SOL-A	652.00		9.882		6.443					
	652.00	53.152	103.313	65.075	-62.932	24.932	-130.293	-87.589	-79.293	6.352
	700.00	54.518	107.137	67.829	-60.348	27.516	-135.344	-88.085	-78.664	5.870
	800.00	57.363	114.603	73.215	-54.754	33.110	-146.436	-88.943	-77.258	5.044
	900.00	60.208	121.523	78.203	-48.876	38.988	-158.247	-142.423	-74.601	4.330
	1000.00	63.053	128.014	82.863	-42.713	45.151	-170.727	-141.342	-67.121	3.506
	1100.00	65.898	134.157	87.249	-36.265	51.599	-183.838	-140.081	-59.758	2.838
	1200.00	68.743	140.013	91.404	-29.533	58.331	-197.549	-138.639	-52.519	2.286
	1249.00	70.137	142.792	93.365	-26.131	61.733	-204.477	-137.864	-49.018	2.050
LIQ	1249.00		24.119		30.125					
	1249.00	76.776	166.911	93.365	3.994	91.858	-204.477	-107.739	-49.018	2.050
	1300.00	76.776	169.984	96.311	7.910	95.774	-213.069	-106.582	-46.643	1.874
	1400.00	76.776	175.673	101.779	15.588	103.452	-230.355	-104.363	-42.116	1.571
	1500.00	76.776	180.970	106.884	23.265	111.129	-248.190	-102.168	-37.746	1.314
	1600.00	76.776	185.925	111.671	30.943	118.807	-266.538	-99.978	-33.523	1.094
	1700.00	76.776	190.580	116.177	38.621	126.485	-285.366	-97.792	-29.437	0.904
	1800.00	76.776	194.968	120.434	46.298	134.162	-304.645	-113.593	-24.719	0.717
	1900.00	76.776	199.120	124.467	53.976	141.840	-324.351	-112.106	-19.822	0.545
	2000.00	76.776	203.058	128.299	61.653	149.517	-344.462	-110.622	-15.003	0.392

References

Phase	H / S	C _p
SOL-B	Ja1	Ja1
SOL-A	Ja1	Ja1
LIQ	Ja1	Ja1

122.822

NICKEL DISULFIDE

NiS2

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	70.625	71.965	71.965	-131.378	0.000	-152.834	-131.378	-124.812	21.867
	300.00	70.664	72.402	71.966	-131.247	0.131	-152.968	-131.380	-124.772	21.725
	400.00	72.739	93.015	74.763	-124.077	7.301	-161.283	-136.104	-122.357	15.978
	500.00	74.814	109.469	80.112	-116.700	14.678	-171.434	-139.487	-118.576	12.388
	600.00	76.889	123.292	86.186	-109.114	22.264	-183.090	-142.326	-114.113	9.934
	700.00	78.965	135.301	92.363	-101.322	30.056	-196.032	-144.469	-109.228	8.151
	800.00	81.040	145.981	98.410	-93.321	38.057	-210.106	-146.281	-104.071	6.795
	900.00	83.115	155.646	104.241	-85.114	46.264	-225.195	-253.638	-96.380	5.594
	1000.00	85.190	164.510	109.830	-76.698	54.680	-241.208	-252.140	-78.987	4.126
	1100.00	87.266	172.727	115.179	-68.076	63.302	-258.075	-250.547	-61.748	2.932
	1200.00	89.341	180.409	120.298	-59.245	72.133	-275.736	-248.854	-44.658	1.944
	1280.00	91.001	186.228	124.238	-52.032	79.346	-290.403	-247.425	-31.091	1.269
LIQ			51.320		65.689					
	1280.00	91.002	237.547	124.238	13.657	145.035	-290.403	-181.736	-31.091	1.269
	1300.00	91.002	238.958	125.993	15.477	146.855	-295.168	-181.372	-28.740	1.155
	1400.00	91.002	245.702	134.305	24.578	155.956	-319.405	-179.589	-17.067	0.637
	1500.00	91.002	251.981	141.944	33.678	165.056	-344.293	-177.836	-5.519	0.192
	1600.00	91.002	257.854	149.006	42.778	174.156	-369.788	-176.091	5.912	-0.193
	1700.00	91.002	263.371	155.573	51.878	183.256	-395.852	-174.355	17.234	-0.530
	1800.00	91.002	268.572	161.708	60.978	192.356	-422.452	-190.611	29.214	-0.848
	1900.00	91.002	273.493	167.463	70.079	201.457	-449.557	-189.581	41.398	-1.138
	2000.00	91.002	278.160	172.882	79.179	210.557	-477.142	-188.560	53.528	-1.398

References

Phase	H / S	C _p
SOL	Ja1	Ja1
LIQ	Ja1	Ja1

Ni3S2

TRINICKEL DISULFIDE

240.202

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL-1	298.15	117.735	133.888	133.888	-216.313	0.000	-256.232	-216.313	-210.396	36.861
	300.00	117.948	134.617	133.890	-216.095	0.218	-256.480	-216.324	-210.359	36.627
	400.00	127.115	169.893	138.638	-203.811	12.502	-271.768	-221.399	-208.101	27.175
	500.00	133.970	199.019	147.884	-190.746	25.567	-290.255	-225.007	-204.405	21.354
	600.00	139.914	223.979	158.535	-177.047	39.266	-311.434	-228.275	-199.971	17.409
	700.00	145.428	245.964	169.485	-162.777	53.536	-334.952	-230.576	-195.034	14.554
	800.00	150.713	265.731	180.300	-147.969	68.344	-360.553	-231.765	-189.874	12.397
	829.00	152.218	271.124	183.383	-143.576	72.737	-368.338	-232.111	-188.349	11.868
SOL-2			67.832		56.233					
	829.00	188.615	338.956	183.383	-87.343	128.970	-368.338	-175.878	-188.349	11.868
	900.00	188.615	354.455	196.276	-73.951	142.362	-392.961	-279.614	-187.191	10.864
	1000.00	188.615	374.328	213.105	-55.090	161.223	-429.418	-274.165	-177.217	9.257
LIQ	1062.00	188.615	385.674	222.852	-43.396	172.917	-452.982	-270.941	-171.305	8.426
			18.595		19.748					
	1062.00	191.795	404.269	222.852	-23.648	192.665	-452.982	-251.193	-171.305	8.426
	1100.00	191.795	411.012	229.236	-16.360	199.953	-468.473	-249.153	-168.482	8.001
	1200.00	191.795	427.700	245.089	2.820	219.133	-510.420	-243.994	-161.379	7.025
	1300.00	191.795	443.052	259.735	21.999	238.312	-553.968	-239.120	-154.694	6.216
	1400.00	191.795	457.265	273.343	41.179	257.492	-598.993	-234.457	-148.375	5.536
	1500.00	191.795	470.498	286.050	60.358	276.671	-645.389	-229.863	-142.387	4.958
	1600.00	191.795	482.876	297.969	79.538	295.851	-693.064	-225.277	-136.705	4.463
	1700.00	191.795	494.503	309.192	98.717	315.030	-741.939	-220.700	-131.309	4.035
	1800.00	191.795	505.466	319.794	117.897	334.210	-791.943	-270.080	-123.903	3.596
	1900.00	191.795	515.836	329.842	137.076	353.389	-843.012	-267.591	-115.850	3.185
	2000.00	191.795	525.674	339.389	156.255	372.568	-895.092	-265.109	-107.928	2.819

References

Phase	H / S	C _p
SOL-1	Ja1	Ja1
SOL-2	Ja1	Ja1
LIQ	Ja1	Ja1

Ni3S4

TRINICKEL TETRASULFIDE

304.334

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	164.814	186.606	186.606	-301.248	0.000	-356.885	-301.248	-291.934	51.146
	300.00	165.080	187.627	186.610	-300.943	0.305	-357.231	-301.256	-291.876	50.820
	400.00	179.448	237.085	193.256	-283.716	17.532	-378.550	-310.551	-288.328	37.652
	500.00	193.815	278.671	206.282	-265.053	36.195	-404.389	-316.366	-282.177	29.479
	600.00	208.183	315.278	221.453	-244.953	56.295	-434.120	-320.385	-274.924	23.934

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 DPT= 629. (Ni(1-x)S + NiS2)

154.754

NICKEL SULFATE

NiSO₄

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [————— kJ / mol —————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	137.999	92.002	92.002	-872.908	0.000	-900.338	-872.908	-759.545	133.069
	300.00	138.076	92.856	92.005	-872.653	0.255	-900.509	-872.852	-758.842	132.126
	400.00	142.227	133.146	97.470	-858.637	14.271	-911.896	-872.092	-721.202	94.179
	500.00	146.377	165.329	107.928	-844.207	28.701	-926.872	-870.638	-683.671	71.423
	600.00	150.528	192.384	119.807	-829.362	43.546	-944.792	-868.960	-646.430	56.277
	700.00	154.678	215.899	131.890	-814.102	58.806	-965.231	-866.836	-609.496	45.481
	800.00	158.829	236.825	143.723	-798.426	74.482	-987.886	-864.286	-572.906	37.407
	900.00	162.979	255.772	155.136	-782.336	90.572	-1012.531	-914.365	-535.491	31.079
	1000.00	167.130	273.158	166.081	-765.831	107.077	-1038.989	-909.866	-493.633	25.785
	1100.00	171.280	289.282	176.557	-748.910	123.998	-1067.120	-905.150	-452.236	21.475
	1200.00	175.431	304.363	186.585	-731.574	141.334	-1096.810	-900.202	-411.279	17.902

References

Phase	H / S	C _p
SOL	Nb1	Nb1,e

180.440

NICKEL ANTIMONY

NiSb

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [————— kJ / mol —————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	49.701	78.241	78.241	-83.680	0.000	-107.007	-83.680	-84.528	14.809
	300.00	49.723	78.548	78.242	-83.588	0.092	-107.153	-83.683	-84.534	14.719
	400.00	50.886	93.012	80.206	-78.558	5.122	-115.762	-83.948	-84.782	11.071
	500.00	52.049	104.492	83.953	-73.411	10.269	-125.657	-84.377	-84.945	8.874
	600.00	53.212	114.084	88.197	-68.148	15.532	-136.598	-85.064	-85.000	7.400
	700.00	54.375	122.374	92.501	-62.768	20.912	-148.430	-85.761	-84.924	6.337
	800.00	55.538	129.711	96.702	-57.273	26.407	-161.042	-86.226	-84.773	5.535
	900.00	56.702	136.320	100.743	-51.661	32.019	-174.348	-86.774	-84.560	4.908
	1000.00	57.865	142.354	104.606	-45.932	37.748	-188.286	-107.304	-82.168	4.292
	1100.00	59.028	147.924	108.294	-40.088	43.592	-202.804	-107.942	-79.624	3.781
	1200.00	60.191	153.109	111.815	-34.127	49.553	-217.858	-108.560	-77.022	3.353

References

Phase	H / S	C _p	Remarks
SOL	P2/Ku1	e	Tk1 MPT= 1433.

NiSe1.05

NICKEL 1.05–SELENIDE

141.598

Phase	T [K]	C_p [—————]	S J / (K mol)	$-(G-H298)/T$ [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH_f [—————]	ΔG_f [—————]	log K_f [-]
SOL	298.15	53.397	75.187	75.187	-74.894	0.000	-97.311	-74.894	-75.175	13.170
	300.00	53.400	75.517	75.188	-74.795	0.099	-97.450	-74.893	-75.176	13.089
	400.00	54.528	90.996	77.291	-69.412	5.482	-105.810	-75.043	-75.259	9.828
	500.00	56.628	103.379	81.308	-63.859	11.035	-115.548	-81.697	-75.178	7.854
	600.00	59.112	113.919	85.885	-58.074	16.820	-126.425	-82.874	-73.766	6.422
	700.00	61.776	123.230	90.567	-52.030	22.864	-138.291	-83.838	-72.158	5.385
	800.00	64.536	131.658	95.185	-45.715	29.179	-151.042	-84.306	-70.455	4.600
	900.00	67.352	139.422	99.674	-39.121	35.773	-164.601	-84.553	-68.707	3.988
	1000.00	70.203	146.665	104.015	-32.244	42.650	-178.909	-84.613	-66.941	3.497
	1100.00	73.077	153.491	108.205	-25.080	49.814	-193.920	-140.461	-59.977	2.848

References

Phase	H / S	C_p	Remarks
SOL	Mi1	Mi1	Tk1 TPT= 503.

NiSe1.143

NICKEL 1.143–SELENIDE

148.704

Phase	T [K]	C_p [—————]	S J / (K mol)	$-(G-H298)/T$ [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH_f [—————]	ΔG_f [—————]	log K_f [-]
SOL	298.15	55.070	77.153	77.153	-79.705	0.000	-102.708	-79.705	-79.438	13.917
	300.00	55.164	77.494	77.154	-79.603	0.102	-102.851	-79.705	-79.436	13.831
	400.00	60.221	94.056	79.378	-73.834	5.871	-111.456	-79.709	-79.347	10.362
	500.00	94.021	108.619	83.753	-67.272	12.433	-121.581	-86.147	-79.165	8.270
	600.00	62.049	120.192	88.914	-60.938	18.767	-133.053	-87.091	-77.701	6.764
	700.00	64.726	129.958	94.093	-54.599	25.106	-145.570	-88.076	-76.045	5.675
	800.00	67.404	138.776	99.136	-47.992	31.713	-159.013	-88.569	-74.290	4.851
	900.00	70.082	146.870	103.996	-41.118	38.587	-173.301	-88.852	-72.486	4.207
	1000.00	72.760	154.392	108.663	-33.976	45.729	-188.368	-88.964	-70.660	3.691

References

Phase	H / S	C_p	Remarks
SOL	Mi1	Mi1	Ni7Se8

157.390

NICKEL 1.25–SELENIDE

NiSe_{1.25}

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL–A	298.15	56.860	80.082	80.082	–83.052	0.000	–106.928	–83.052	–82.272	14.414
	300.00	56.940	80.434	80.083	–82.947	0.105	–107.077	–83.054	–82.267	14.324
	400.00	60.509	97.331	82.363	–77.065	5.987	–115.997	–83.238	–81.983	10.706
	500.00	63.349	111.146	86.779	–70.868	12.184	–126.441	–91.011	–81.523	8.517
	589.00	81.002	122.930	91.339	–64.445	18.607	–136.851	–91.389	–79.784	7.076
			0.000		0.000					
SOL–B	589.00	67.883	122.930	91.339	–64.445	18.607	–136.851	–91.389	–79.784	7.076
	600.00	67.742	124.185	91.930	–63.699	19.353	–138.210	–91.507	–79.566	6.927
	700.00	68.328	134.633	97.302	–56.920	26.132	–151.163	–92.438	–77.492	5.783
	800.00	71.162	143.924	102.558	–49.959	33.093	–165.098	–92.963	–75.318	4.918
	900.00	75.302	152.534	107.637	–42.645	40.407	–179.926	–93.193	–73.095	4.242
	995.00	79.992	160.317	112.298	–35.273	47.779	–194.788	–93.077	–70.977	3.726
			0.000		0.000					
SOL–C	995.00	78.324	160.317	112.298	–35.273	47.779	–194.788	–93.077	–70.977	3.726
	1000.00	78.483	160.710	112.539	–34.881	48.171	–195.591	–93.070	–70.866	3.702
	1100.00	81.678	168.340	117.268	–26.873	56.179	–212.047	–159.439	–62.464	2.966

References

Phase	H / S	C _p	Remarks
SOL–A	Mi1	Mi1	Mi1 Ni ₄ Se ₅
SOL–B	u	Mi1	
SOL–C	u	Mi1	

216.610

NICKEL DISELENIDE

NiSe₂

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	75.479	103.512	103.512	–108.784	0.000	–139.646	–108.784	–105.541	18.490
	300.00	75.560	103.979	103.514	–108.644	0.140	–139.838	–108.787	–105.520	18.373
	400.00	79.123	126.235	106.524	–100.899	7.885	–151.394	–109.109	–104.394	13.632
	500.00	81.883	144.196	112.319	–92.845	15.939	–164.943	–121.632	–102.972	10.757
	600.00	84.327	159.344	118.926	–84.533	24.251	–180.140	–123.621	–99.056	8.624
	700.00	86.622	172.517	125.661	–75.985	32.799	–196.747	–125.419	–94.807	7.075
	800.00	88.837	184.229	132.263	–67.211	41.573	–214.595	–126.767	–90.340	5.899
	900.00	91.006	194.818	138.635	–58.219	50.565	–233.555	–127.955	–85.714	4.975
	1000.00	93.146	204.518	144.745	–49.011	59.773	–253.529	–129.023	–80.962	4.229
	1100.00	95.268	213.495	150.592	–39.590	69.194	–274.435	–236.599	–66.200	3.144
	1123.00	95.754	215.471	151.900	–37.394	71.390	–279.368	–236.139	–62.642	2.914

References

Phase	H / S	C _p	Remarks
SOL	Mi1	Mi1	Tk1 MPT= 1123.

NiSeO3

NICKEL SELENITE

185.648

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	97.335	103.345	103.345	-567.350	0.000	-598.162	-567.350	-484.909	84.954
	300.00	97.445	103.947	103.347	-567.170	0.180	-598.354	-567.347	-484.398	84.341
	400.00	103.428	132.800	107.240	-557.126	10.224	-610.246	-567.159	-456.776	59.649
	500.00	109.412	156.522	114.790	-546.484	20.866	-624.745	-572.872	-429.119	44.830
	600.00	115.395	176.999	123.489	-535.244	32.106	-641.443	-573.158	-400.340	34.853
	700.00	121.378	195.237	132.458	-523.405	43.945	-660.071	-573.033	-371.531	27.724
	800.00	127.361	211.835	141.358	-510.968	56.382	-680.436	-572.208	-342.796	22.382

References

Phase	H / S	C _p
SOL	Tk1	e

NiSi

NICKEL SILICON

86.775

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	44.767	46.861	46.861	-85.354	0.000	-99.326	-85.354	-84.808	14.858
	300.00	44.868	47.138	46.862	-85.271	0.083	-99.412	-85.356	-84.804	14.766
	400.00	48.649	60.629	48.675	-80.573	4.781	-104.824	-85.512	-84.599	11.047
	500.00	50.728	71.726	52.209	-75.596	9.758	-111.459	-85.771	-84.344	8.811
	600.00	52.137	81.106	56.264	-70.449	14.905	-119.112	-86.272	-84.017	7.314
	700.00	53.229	89.228	60.406	-65.179	20.175	-127.638	-86.768	-83.591	6.238
	800.00	54.153	96.398	64.465	-59.808	25.546	-136.926	-86.999	-83.122	5.427
	900.00	54.979	102.824	68.377	-54.351	31.003	-146.893	-87.254	-82.622	4.795
	1000.00	55.744	108.657	72.117	-48.815	36.539	-157.471	-87.574	-82.091	4.288
	1100.00	56.470	114.004	75.686	-43.204	42.150	-168.608	-87.963	-81.525	3.871
	1200.00	57.168	118.948	79.087	-37.522	47.832	-180.259	-88.421	-80.920	3.522
	1265.00	57.611	121.975	81.214	-33.791	51.563	-188.090	-88.755	-80.505	3.324
			34.729		43.932					
LIQ	1265.00	79.496	156.704	81.214	10.141	95.495	-188.090	-44.823	-80.505	3.324
	1300.00	79.496	158.874	83.276	12.923	98.277	-193.612	-44.251	-81.500	3.275
	1400.00	79.496	164.765	88.889	20.873	106.227	-209.798	-42.685	-84.424	3.150
	1500.00	79.496	170.249	94.132	28.822	114.176	-226.552	-41.179	-87.459	3.046
	1600.00	79.496	175.380	99.051	36.772	122.126	-243.836	-39.714	-90.592	2.958
	1700.00	79.496	180.199	103.684	44.722	130.076	-261.617	-88.467	-93.369	2.869
	1800.00	79.496	184.743	108.063	52.671	138.025	-279.867	-104.839	-92.944	2.697

References

Phase	H / S	C _p
SOL	Tk1	Tk1,C1
LIQ	Tk1	C1

775.942

7-NICKEL 13-SILICON

Ni7Si13

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	436.714	436.726	436.726	-586.053	0.000	-716.263	-586.053	-580.971	101.784
	300.00	437.849	439.431	436.734	-585.244	0.809	-717.073	-586.063	-580.939	101.151
	400.00	480.326	571.933	454.512	-539.085	46.968	-767.858	-586.620	-579.153	75.630
	500.00	503.951	681.854	489.309	-489.781	96.272	-830.707	-587.638	-577.186	60.298
	600.00	520.155	775.240	529.377	-438.535	147.518	-903.679	-590.189	-574.892	50.049
	700.00	532.856	856.408	570.424	-385.864	200.189	-985.350	-592.573	-572.083	42.689
	800.00	543.690	928.284	610.749	-332.025	254.028	-1074.652	-592.992	-569.125	37.160
	900.00	553.437	992.892	649.680	-277.162	308.891	-1170.765	-593.482	-566.115	32.856
	1000.00	562.511	1051.677	686.984	-221.360	364.693	-1273.037	-594.336	-563.033	29.410
	1100.00	571.144	1105.698	722.626	-164.674	421.379	-1380.942	-595.580	-559.845	26.585
	1200.00	579.478	1155.753	756.660	-107.141	478.912	-1494.045	-597.223	-556.527	24.225
	1253.00	583.804	1180.890	774.075	-76.314	509.739	-1555.970	-598.252	-554.708	23.124

References

Phase	H / S	C _p	Remarks
SOL	Tk1	Tk1,C1	Tk1 DPT= 1253. (LIQ + Si)

294.780

3-NICKEL TIN

Ni3Sn

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	99.601	131.378	131.378	-93.701	0.000	-132.871	-93.701	-90.887	15.923
	300.00	99.680	131.994	131.380	-93.517	0.184	-133.115	-93.711	-90.869	15.822
	400.00	103.947	161.254	135.340	-83.335	10.366	-147.837	-94.519	-89.813	11.728
	500.00	108.215	184.908	142.961	-72.727	20.974	-165.181	-95.754	-88.504	9.246
	600.00	112.483	205.015	151.667	-61.692	32.009	-184.701	-104.489	-85.583	7.451
	700.00	116.750	222.675	160.575	-50.231	43.470	-206.103	-105.839	-82.290	6.141
	800.00	121.018	238.543	169.345	-38.342	55.359	-229.177	-106.073	-78.906	5.152
	900.00	125.286	253.044	177.850	-26.027	67.674	-253.766	-106.057	-75.510	4.382

References

Phase	H / S	C _p	Remarks
SOL	Nb1/Ku1	Nb1,e	Hu1,Tk1 TPT= 1250., MPT= 1447., L= 94.98 kJ

Ni3Sn2

3-NICKEL 2-TIN

413.490

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	108.670	173.636	173.636	-156.900	0.000	-208.670	-156.900	-151.421	26.528
	300.00	108.742	174.308	173.638	-156.699	0.201	-208.991	-156.944	-151.387	26.359
	400.00	112.633	206.125	177.950	-145.630	11.270	-228.080	-159.657	-149.145	19.476
	500.00	116.524	231.676	186.220	-134.172	22.728	-250.010	-163.015	-146.143	15.267
	600.00	120.416	253.265	195.640	-122.325	34.575	-274.284	-180.894	-139.776	12.169
	700.00	124.307	272.119	205.246	-110.089	46.811	-300.573	-184.329	-132.617	9.896
	800.00	128.198	288.972	214.677	-97.464	59.436	-328.641	-186.671	-125.066	8.166
	900.00	132.089	304.296	223.796	-84.450	72.450	-358.316	-188.801	-117.236	6.804
	1000.00	135.980	318.414	232.561	-71.046	85.854	-389.461	-190.830	-109.175	5.703
	1100.00	139.871	331.557	240.970	-57.254	99.646	-421.967	-192.761	-100.915	4.792
	1200.00	143.762	343.894	249.038	-43.072	113.828	-455.745	-194.593	-92.484	4.026
	1300.00	147.653	355.555	256.787	-28.501	128.399	-490.723	-196.310	-83.904	3.371
	1400.00	151.544	366.640	264.241	-13.541	143.359	-526.837	-197.839	-75.199	2.806

References

Phase	H / S	C _p	Remarks
SOL	Nb1/Ku1	e	Hu1,Tk1 TPT= 873., MPT= 1537., L= 127.6 kJ

NiTe1.1

NICKEL 1.1-TELLURIDE

199.050

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	54.787	84.057	84.057	-58.158	0.000	-83.219	-58.158	-58.079	10.175
	300.00	54.856	84.396	84.058	-58.056	0.101	-83.375	-58.157	-58.079	10.112
	400.00	57.517	100.581	86.246	-52.424	5.734	-92.656	-58.210	-58.051	7.581
	500.00	59.131	113.600	90.458	-46.586	11.571	-103.386	-58.526	-57.981	6.057
	600.00	60.332	124.492	95.247	-40.611	17.547	-115.306	-59.262	-57.811	5.033
	700.00	61.339	133.869	100.110	-34.526	23.631	-128.235	-60.177	-57.489	4.290
	800.00	62.242	142.120	104.856	-28.346	29.811	-142.042	-80.400	-54.982	3.590
	900.00	63.085	149.500	109.413	-22.080	36.078	-156.630	-81.427	-51.743	3.003
	1000.00	63.890	156.188	113.761	-15.731	42.427	-171.919	-82.467	-48.390	2.528

References

Phase	H / S	C _p
SOL	Tk1,Mi1	Mi1

106.570

NICKEL TITANIUM

NiTi

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	46.749	53.137	53.137	-67.781	0.000	-83.624	-67.781	-65.546	11.483
	300.00	46.879	53.426	53.138	-67.694	0.087	-83.722	-67.789	-65.532	11.410
	400.00	51.787	67.666	55.046	-62.733	5.048	-89.799	-68.149	-64.723	8.452
	500.00	54.576	79.545	58.792	-57.405	10.376	-97.177	-68.477	-63.830	6.668
	600.00	56.530	89.676	63.115	-51.845	15.936	-105.650	-68.974	-62.858	5.472
	700.00	58.091	98.511	67.554	-46.111	21.670	-115.069	-69.430	-61.792	4.611
	800.00	59.442	106.358	71.923	-40.233	27.548	-125.320	-69.616	-60.689	3.963
	900.00	60.670	113.431	76.149	-34.227	33.554	-136.315	-69.841	-59.560	3.457
	1000.00	61.823	119.883	80.204	-28.102	39.679	-147.985	-70.158	-58.402	3.051
	1100.00	62.926	125.828	84.085	-21.864	45.917	-160.274	-70.570	-57.207	2.717
	1200.00	63.995	131.349	87.796	-15.518	52.263	-173.137	-75.076	-55.851	2.431
	1300.00	65.041	136.513	91.347	-9.066	58.715	-186.532	-75.143	-54.247	2.180
	1400.00	66.070	141.371	94.748	-2.510	65.271	-200.429	-75.236	-52.636	1.964
	1500.00	67.085	145.964	98.011	4.148	71.929	-214.798	-75.316	-51.019	1.777
	1583.00	67.921	149.599	100.621	9.750	77.531	-227.065	-75.362	-49.673	1.639

References

Phase	H / S	C _p	Remarks
SOL	Hu1/Ku1	e	Hu1 MPT= 1583.

154.450

NICKEL 2-TITANIUM

NiTi2

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	74.976	83.680	83.680	-80.333	0.000	-105.282	-80.333	-78.034	13.671
	300.00	75.019	84.144	83.681	-80.194	0.139	-105.437	-80.335	-78.019	13.584
	400.00	77.362	106.046	86.652	-72.575	7.758	-114.994	-80.626	-77.212	10.083
	500.00	79.705	123.561	92.339	-64.722	15.611	-126.502	-81.130	-76.304	7.971
	600.00	82.048	138.300	98.802	-56.634	23.699	-139.614	-81.884	-75.273	6.553
	700.00	84.391	151.124	105.380	-48.312	32.021	-154.099	-82.624	-74.103	5.530
	800.00	86.734	162.546	111.824	-39.756	40.577	-169.792	-83.103	-72.853	4.757
	900.00	89.077	172.897	118.044	-30.965	49.368	-186.572	-83.624	-71.541	4.152
	1000.00	91.420	182.403	124.011	-21.940	58.393	-204.344	-84.236	-70.166	3.665
	1100.00	93.763	191.226	129.725	-12.681	67.652	-223.030	-84.932	-68.726	3.264
	1200.00	96.106	199.485	135.198	-3.188	77.145	-242.570	-93.702	-66.981	2.916

References

Phase	H / S	C _p	Remarks
SOL	Nb1/Ku1	e	Hu1 DPT= 1257. (NiTi + LIQ)

Ni3Ti

3-NICKEL TITANIUM

223.950

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	93.504	104.600	104.600	-138.909	0.000	-170.095	-138.909	-134.204	23.512
	300.00	93.787	105.179	104.602	-138.736	0.173	-170.290	-138.927	-134.175	23.362
	400.00	104.321	133.785	108.430	-128.767	10.142	-182.281	-139.744	-132.463	17.298
	500.00	110.102	157.735	115.964	-118.023	20.886	-196.891	-140.569	-130.552	13.639
	600.00	114.013	178.174	124.671	-106.807	32.102	-213.712	-141.953	-128.433	11.181
	700.00	117.040	195.984	133.613	-95.250	43.659	-232.438	-143.220	-126.048	9.406
	800.00	119.597	211.783	142.416	-83.415	55.494	-252.842	-143.633	-123.566	8.068
	900.00	121.880	226.004	150.926	-71.339	67.570	-274.743	-144.092	-121.032	7.025
	1000.00	123.993	238.955	159.091	-59.045	79.864	-298.000	-144.734	-118.437	6.187
	1100.00	125.995	250.868	166.900	-46.544	92.365	-322.499	-145.573	-115.768	5.497
	1200.00	127.921	261.914	174.363	-33.848	105.061	-348.145	-150.611	-112.896	4.914
	1300.00	129.794	272.227	181.499	-20.962	117.947	-374.858	-151.309	-109.725	4.409
	1400.00	131.629	281.913	188.329	-7.891	131.018	-402.569	-152.085	-106.497	3.973
	1500.00	133.435	291.057	194.875	5.363	144.272	-431.222	-152.808	-103.215	3.594
	1600.00	135.219	299.725	201.160	18.796	157.705	-460.765	-153.426	-99.888	3.261
	1653.00	136.157	304.147	204.391	25.987	164.896	-476.768	-153.716	-98.110	3.100

References

Phase	H / S	C _p	Remarks
SOL	Hu1/Ku1	e	Hu1 MPT= 1653.

NiWO4

NICKEL TUNGSTATE

306.538

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	121.438	125.520	125.520	-1127.170	0.000	-1164.594	-1127.170	-1023.620	179.334
	300.00	121.491	126.271	125.522	-1126.945	0.225	-1164.827	-1127.147	-1022.978	178.116
	400.00	124.332	161.611	130.322	-1114.654	12.516	-1179.299	-1125.996	-988.433	129.076
	500.00	127.173	189.660	139.478	-1102.079	25.091	-1196.909	-1125.009	-954.160	99.680
	600.00	130.014	213.098	149.847	-1089.220	37.950	-1217.078	-1124.299	-920.063	80.099
	700.00	132.855	233.353	160.362	-1076.076	51.094	-1239.423	-1123.582	-886.070	66.119
	800.00	135.695	251.278	170.627	-1062.649	64.521	-1263.671	-1122.566	-852.208	55.643
	900.00	138.536	267.425	180.500	-1048.937	78.233	-1289.620	-1121.505	-818.477	47.503
	1000.00	141.377	282.168	189.940	-1034.941	92.229	-1317.110	-1120.415	-784.865	40.997
	1100.00	144.218	295.776	198.950	-1020.662	106.508	-1346.016	-1119.277	-751.365	35.679
	1200.00	147.059	308.447	207.553	-1006.098	121.072	-1376.234	-1118.076	-717.970	31.252
	1300.00	149.900	320.330	215.776	-991.250	135.920	-1407.679	-1116.797	-684.680	27.511
	1400.00	152.741	331.543	223.648	-976.118	151.052	-1440.277	-1115.407	-651.491	24.307
	1500.00	155.582	342.178	231.199	-960.702	166.468	-1473.968	-1113.855	-618.407	21.535

References

Phase	H / S	C _p
SOL	Tk1	e

237.048

NEPTUNIUM

Np

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
SOL–A	298.15	29.624	50.459	50.459	0.000	0.000	–15.044	0.000	0.000	0.000
	300.00	29.666	50.642	50.460	0.055	0.055	–15.138	0.000	0.000	0.000
	400.00	34.019	59.693	51.665	3.212	3.212	–20.666	0.000	0.000	0.000
	500.00	40.444	67.953	54.103	6.925	6.925	–27.052	0.000	0.000	0.000
	553.00	44.216	72.213	55.635	9.168	9.168	–30.766	0.000	0.000	0.000
SOL–B			10.139		5.607					
	553.00	39.325	82.352	55.635	14.775	14.775	–30.766	0.000	0.000	0.000
	600.00	39.325	85.560	57.855	16.623	16.623	–34.713	0.000	0.000	0.000
	700.00	39.325	91.622	62.257	20.555	20.555	–43.580	0.000	0.000	0.000
	800.00	39.325	96.873	66.263	24.488	24.488	–53.011	0.000	0.000	0.000
SOL–C	849.00	39.325	99.211	68.098	26.415	26.415	–57.815	0.000	0.000	0.000
			6.210		5.272					
	849.00	36.392	105.421	68.098	31.687	31.687	–57.815	0.000	0.000	0.000
	900.00	36.392	107.543	70.274	33.543	33.543	–63.246	0.000	0.000	0.000
	912.00	36.392	108.026	70.767	33.980	33.980	–64.540	0.000	0.000	0.000
LIQ			5.689		5.188					
	912.00	45.396	113.714	70.767	39.168	39.168	–64.540	0.000	0.000	0.000
	1000.00	45.396	117.896	74.733	43.162	43.162	–74.733	0.000	0.000	0.000
	1100.00	45.396	122.223	78.857	47.702	47.702	–86.743	0.000	0.000	0.000
	1200.00	45.396	126.173	82.638	52.242	52.242	–99.165	0.000	0.000	0.000
	1300.00	45.396	129.806	86.128	56.781	56.781	–111.967	0.000	0.000	0.000
	1400.00	45.396	133.170	89.370	61.321	61.321	–125.118	0.000	0.000	0.000
	1500.00	45.396	136.302	92.395	65.861	65.861	–138.593	0.000	0.000	0.000
	1600.00	45.396	139.232	95.232	70.400	70.400	–152.371	0.000	0.000	0.000
	1700.00	45.396	141.984	97.902	74.940	74.940	–166.434	0.000	0.000	0.000
	1800.00	45.396	144.579	100.424	79.480	79.480	–180.763	0.000	0.000	0.000
	1900.00	45.396	147.034	102.813	84.019	84.019	–195.345	0.000	0.000	0.000
	2000.00	45.396	149.362	105.083	88.559	88.559	–210.166	0.000	0.000	0.000
	2100.00	45.396	151.577	107.244	93.099	93.099	–225.213	0.000	0.000	0.000
	2200.00	45.396	153.689	109.308	97.638	97.638	–240.478	0.000	0.000	0.000
	2300.00	45.396	155.707	111.282	102.178	102.178	–255.948	0.000	0.000	0.000
	2400.00	45.396	157.639	113.173	106.717	106.717	–271.616	0.000	0.000	0.000
	2500.00	45.396	159.492	114.989	111.257	111.257	–287.473	0.000	0.000	0.000
	2600.00	45.396	161.273	116.735	115.797	115.797	–303.512	0.000	0.000	0.000
	2700.00	45.396	162.986	118.417	120.336	120.336	–319.726	0.000	0.000	0.000
	2800.00	45.396	164.637	120.038	124.876	124.876	–336.107	0.000	0.000	0.000
	2900.00	45.396	166.230	121.604	129.416	129.416	–352.651	0.000	0.000	0.000
	3000.00	45.396	167.769	123.117	133.955	133.955	–369.351	0.000	0.000	0.000
	3100.00	45.396	169.257	124.582	138.495	138.495	–386.203	0.000	0.000	0.000
	3200.00	45.396	170.699	126.000	143.035	143.035	–403.201	0.000	0.000	0.000
	3300.00	45.396	172.096	127.376	147.574	147.574	–420.341	0.000	0.000	0.000
	3400.00	45.396	173.451	128.711	152.114	152.114	–437.619	0.000	0.000	0.000
	3500.00	45.396	174.767	130.009	156.653	156.653	–455.030	0.000	0.000	0.000

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
LIQ	3600.00	45.396	176.046	131.270	161.193	161.193	-472.571	0.000	0.000	0.000
	3700.00	45.396	177.289	132.497	165.733	165.733	-490.238	0.000	0.000	0.000
	3800.00	45.396	178.500	133.692	170.272	170.272	-508.028	0.000	0.000	0.000
	3900.00	45.396	179.679	134.856	174.812	174.812	-525.937	0.000	0.000	0.000
	4000.00	45.396	180.829	135.991	179.352	179.352	-543.963	0.000	0.000	0.000
	4100.00	45.396	181.950	137.098	183.891	183.891	-562.102	0.000	0.000	0.000
	4200.00	45.396	183.043	138.179	188.431	188.431	-580.352	0.000	0.000	0.000
	4300.00	45.396	184.112	139.235	192.971	192.971	-598.710	0.000	0.000	0.000
	4352.44	45.396	184.662	139.779	195.351	195.351	-608.379	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL-A	Oe2	Oe2	
SOL-B	Oe2	Oe2	
SOL-C	Oe2	Oe2	
LIQ	Oe2	Oe2	e BPT= 4352.44, L= 423.367 kJ

237.048

NEPTUNIUM (GAS)

Np[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [—————]
GAS	298.15	20.816	197.716	197.716	464.842	0.000	405.893	464.842	420.937	-73.746
	300.00	20.830	197.844	197.716	464.881	0.039	405.527	464.826	420.665	-73.244
	400.00	21.078	203.879	198.537	466.979	2.137	385.427	463.767	406.093	-53.030
	500.00	21.573	208.626	200.096	469.107	4.265	364.794	462.182	391.845	-40.936
	600.00	22.493	212.636	201.860	471.308	6.466	343.726	454.685	378.439	-32.946
	700.00	23.670	216.189	203.657	473.614	8.772	322.282	453.059	365.862	-27.301
	800.00	24.973	219.434	205.429	476.046	11.204	300.499	451.558	353.509	-23.082
	900.00	26.322	222.453	207.155	478.610	13.768	278.403	445.067	341.649	-19.829
	1000.00	27.668	225.296	208.828	481.310	16.468	256.014	438.148	330.747	-17.276
	1100.00	28.984	227.995	210.449	484.143	19.301	233.348	436.441	320.091	-15.200
	1200.00	30.251	230.572	212.019	487.105	22.263	210.419	434.863	309.584	-13.476
	1300.00	31.462	233.042	213.542	490.191	25.349	187.237	433.410	299.204	-12.022
	1400.00	32.611	235.416	215.020	493.395	28.553	163.814	432.074	288.931	-10.780
	1500.00	33.697	237.703	216.457	496.711	31.869	140.157	430.851	278.750	-9.707
	1600.00	34.720	239.911	217.854	500.133	35.291	116.276	429.732	268.647	-8.770
	1700.00	35.682	242.045	219.214	503.653	38.811	92.177	428.713	258.611	-7.946
	1800.00	36.587	244.110	220.541	507.267	42.425	67.869	427.788	248.632	-7.215
	1900.00	37.437	246.111	221.834	510.969	46.127	43.357	426.950	238.702	-6.562
	2000.00	38.236	248.052	223.097	514.753	49.911	18.649	426.194	228.814	-5.976
	2100.00	38.991	249.936	224.330	518.615	53.773	-6.251	425.516	218.962	-5.446
	2200.00	39.704	251.766	225.536	522.550	57.708	-31.337	424.911	209.141	-4.966
	2300.00	40.380	253.546	226.715	526.554	61.712	-56.603	424.376	199.345	-4.527
	2400.00	41.026	255.279	227.869	530.625	65.783	-82.044	423.907	189.572	-4.126
	2500.00	41.646	256.966	229.000	534.758	69.916	-107.657	423.501	179.816	-3.757
	2600.00	42.185	258.610	230.107	538.950	74.108	-133.436	423.154	170.076	-3.417
	2700.00	42.682	260.212	231.192	543.194	78.352	-159.377	422.858	160.348	-3.102
	2800.00	43.146	261.772	232.257	547.486	82.644	-185.477	422.610	150.630	-2.810
	2900.00	43.582	263.294	233.301	551.822	86.980	-211.731	422.407	140.920	-2.538
	3000.00	43.994	264.779	234.326	556.201	91.359	-238.135	422.246	131.217	-2.285
	3100.00	44.385	266.228	235.331	560.620	95.778	-264.685	422.126	121.518	-2.048
	3200.00	44.756	267.643	236.319	565.078	100.236	-291.379	422.043	111.822	-1.825
	3300.00	45.111	269.025	237.289	569.571	104.729	-318.213	421.997	102.129	-1.617
	3400.00	45.451	270.377	238.243	574.099	109.257	-345.183	421.986	92.436	-1.420
	3500.00	45.776	271.699	239.180	578.661	113.819	-372.287	422.007	82.743	-1.235
	3600.00	46.088	272.993	240.101	583.254	118.412	-399.522	422.061	73.049	-1.060
	3700.00	46.388	274.260	241.007	587.878	123.036	-426.885	422.145	63.353	-0.894
	3800.00	46.676	275.501	241.899	592.531	127.689	-454.373	422.259	53.655	-0.738
	3900.00	46.953	276.717	242.776	597.213	132.371	-481.984	422.401	43.953	-0.589
	4000.00	47.219	277.909	243.639	601.922	137.080	-509.716	422.570	34.247	-0.447
	4100.00	47.475	279.078	244.490	606.656	141.814	-537.565	422.765	24.536	-0.313
	4200.00	47.720	280.225	245.327	611.416	146.574	-565.531	422.985	14.821	-0.184
	4300.00	47.955	281.351	246.152	616.200	151.358	-593.610	423.229	5.100	-0.062
	4400.00	48.180	282.456	246.964	621.007	156.165	-621.800	0.000	0.000	0.000
	4500.00	48.396	283.541	247.765	625.836	160.994	-650.100	0.000	0.000	0.000
	4600.00	48.602	284.607	248.554	630.686	165.844	-678.508	0.000	0.000	0.000
	4700.00	48.798	285.655	249.333	635.556	170.714	-707.021	0.000	0.000	0.000
	4800.00	48.985	286.684	250.100	640.445	175.603	-735.638	0.000	0.000	0.000
	4900.00	49.162	287.696	250.857	645.352	180.510	-764.357	0.000	0.000	0.000
	5000.00	49.330	288.691	251.604	650.277	185.435	-793.177	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Pa1	Pa1,e

NpCl3

NEPTUNIUM TRICHLORIDE

343.406

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
[————— kJ / mol —————]										
SOL	298.15	101.617	160.247	160.247	-903.744	0.000	-951.522	-903.744	-836.694	146.585
	300.00	101.671	160.876	160.249	-903.556	0.188	-951.819	-903.705	-836.278	145.609
	400.00	104.600	190.526	164.272	-893.242	10.502	-969.453	-901.749	-814.107	106.311
	500.00	107.529	214.181	171.965	-882.636	21.108	-989.727	-900.212	-792.384	82.780
	600.00	110.458	234.045	180.700	-871.737	32.007	-1012.164	-904.464	-770.460	67.074
	700.00	113.386	251.292	189.579	-860.544	43.200	-1036.449	-902.719	-748.260	55.836
	800.00	116.315	266.624	198.268	-849.059	54.685	-1062.359	-900.724	-726.328	47.424
	900.00	119.244	280.493	206.646	-837.281	66.463	-1089.725	-903.590	-704.349	40.879
	1000.00	122.173	293.208	214.675	-825.211	78.533	-1118.419	-906.751	-681.822	35.615

References

Phase	H / S	C _p
SOL	Ku1/e	e

NpCl4

NEPTUNIUM TETRACHLORIDE

378.859

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
[————— kJ / mol —————]										
SOL	298.15	120.777	199.577	199.577	-987.424	0.000	-1046.928	-987.424	-898.839	157.473
	300.00	120.889	200.324	199.579	-987.200	0.224	-1047.298	-987.381	-898.290	156.406
	400.00	126.082	235.846	204.387	-974.840	12.584	-1069.179	-985.112	-868.939	113.472
	500.00	130.411	264.455	213.630	-962.012	25.412	-1094.239	-983.138	-840.132	87.768
	600.00	134.401	288.588	224.163	-948.769	38.655	-1121.922	-986.864	-811.221	70.623
	700.00	138.230	309.595	234.898	-935.137	52.287	-1151.853	-984.518	-782.128	58.363
	800.00	141.974	328.298	245.425	-921.126	66.298	-1183.764	-981.850	-753.394	49.192

References

Phase	H / S	C _p
SOL	Ku1	e

294.043

NEPTUNIUM TRIFLUORIDE

NpF3

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	108.524	118.407	118.407	–1506.240	0.000	–1541.543	–1506.240	–1435.804	251.547
	300.00	108.575	119.079	118.409	–1506.039	0.201	–1541.763	–1506.181	–1435.367	249.920
	400.00	111.294	150.686	122.700	–1495.046	11.194	–1555.320	–1503.165	–1412.228	184.418
	500.00	114.014	175.813	130.894	–1483.780	22.460	–1571.687	–1500.657	–1389.796	145.191
	600.00	116.734	196.841	140.179	–1472.243	33.997	–1590.347	–1504.027	–1367.350	119.038
	700.00	119.453	215.039	149.602	–1460.434	45.806	–1610.961	–1501.476	–1344.769	100.348
	800.00	122.173	231.168	158.808	–1448.352	57.888	–1633.286	–1498.736	–1322.567	86.355
	900.00	124.892	245.715	167.669	–1435.999	70.241	–1657.142	–1500.909	–1300.409	75.474
	1000.00	127.612	259.014	176.148	–1423.374	82.866	–1682.388	–1503.424	–1277.777	66.744

References

Phase	H / S	C _p
SOL	Ku1	e

351.039

NEPTUNIUM HEXAFLUORIDE

NpF6

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	167.442	229.095	229.095	–1985.308	0.000	–2053.613	–1985.308	–1857.178	325.370
	300.00	168.089	230.133	229.098	–1984.998	0.310	–2054.037	–1985.226	–1856.384	323.225
	327.91	177.847	245.513	229.844	–1980.170	5.138	–2060.676	–1983.879	–1844.456	293.814
			53.438		17.523					
LIQ	327.91	186.500	298.951	229.844	–1962.647	22.661	–2060.676	–1966.356	–1844.456	293.814
	350.00	188.903	311.188	234.595	–1958.501	26.807	–2067.416	–1965.011	–1836.288	274.051

References

Phase	H / S	C _p
SOL	Pa2	Pa2
LIQ	Pa2	Pa2

NpF6[g]

NEPTUNIUM HEXAFLUORIDE (GAS)

351.039

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		[-]
GAS	298.15	129.069	376.632	376.632	-1937.192	0.000	-2049.485	-1937.192	-1853.050	324.647
	300.00	129.365	377.431	376.634	-1936.953	0.239	-2050.182	-1937.182	-1852.528	322.554
	400.00	140.028	416.312	381.863	-1923.412	13.780	-2089.937	-1936.438	-1824.419	238.245
	500.00	145.351	448.188	392.039	-1909.118	28.074	-2133.212	-1935.947	-1796.482	187.677
	600.00	148.572	474.994	403.691	-1894.410	42.782	-2179.407	-1941.356	-1768.124	153.929
	700.00	150.801	498.073	415.564	-1879.436	57.756	-2228.087	-1940.965	-1739.283	129.787
	800.00	152.500	518.325	427.169	-1864.267	72.925	-2278.927	-1940.547	-1710.500	111.684
	900.00	153.892	536.369	438.318	-1848.946	88.246	-2331.678	-1945.224	-1681.458	97.589
	1000.00	155.093	552.647	448.950	-1833.495	103.697	-2386.142	-1950.434	-1651.654	86.274

References

Phase	H / S	C _p
GAS	Pa2	Pa2

NpO2

NEPTUNIUM DIOXIDE

269.047

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		[-]
SOL	298.15	63.715	80.333	80.333	-1029.264	0.000	-1053.215	-1029.264	-977.006	171.167
	300.00	63.957	80.728	80.334	-1029.146	0.118	-1053.364	-1029.255	-976.682	170.055
	400.00	72.689	100.489	82.969	-1022.256	7.008	-1062.452	-1028.493	-959.263	125.267
	500.00	77.094	117.228	88.193	-1014.746	14.518	-1073.360	-1027.755	-942.047	98.415
	600.00	79.797	131.540	94.254	-1006.892	22.372	-1085.816	-1032.759	-924.477	80.483
	700.00	81.696	143.991	100.489	-998.813	30.451	-1099.607	-1031.867	-906.499	67.644
	800.00	83.166	154.999	106.628	-990.567	38.697	-1114.567	-1030.891	-888.655	58.023
	900.00	84.388	164.867	112.560	-982.188	47.076	-1130.568	-1034.972	-870.625	50.530
	1000.00	85.454	173.814	118.245	-973.695	55.569	-1147.509	-1039.560	-851.901	44.499
	1100.00	86.419	182.005	123.675	-965.101	64.163	-1165.306	-1039.015	-833.161	39.564
	1200.00	87.316	189.563	128.854	-956.413	72.851	-1183.889	-1038.416	-814.473	35.453
	1300.00	88.164	196.586	133.798	-947.639	81.625	-1203.201	-1037.764	-795.837	31.977
	1400.00	88.977	203.150	138.519	-938.782	90.482	-1223.191	-1037.060	-777.254	29.000
	1500.00	89.764	209.315	143.036	-929.845	99.419	-1243.818	-1036.304	-758.722	26.421

References

Phase	H / S	C _p
SOL	Ku1	e

323.953

NEPTUNIUM DICHLORIDE OXIDE

NpOCl₂

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	92.605	140.164	140.164	-1028.427	0.000	-1070.217	-1028.427	-958.068	167.850
	300.00	92.778	140.737	140.166	-1028.256	0.171	-1070.477	-1028.400	-957.632	166.738
	400.00	99.590	168.457	143.899	-1018.604	9.823	-1085.987	-1026.858	-934.272	122.003
	500.00	103.889	191.169	151.150	-1008.418	20.009	-1104.002	-1025.486	-911.292	95.202
	600.00	107.199	210.412	159.464	-997.858	30.569	-1124.105	-1029.839	-888.085	77.315
	700.00	110.042	227.155	167.964	-986.993	41.434	-1146.002	-1028.211	-864.585	64.516
	800.00	112.636	242.020	176.309	-975.858	52.569	-1169.474	-1026.382	-841.333	54.933

References

Phase	H / S	C _p
SOL	Ku1	e

303.062

NEPTUNIUM TRIOXIDE HYDRATE

NpO₃*H₂O

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	117.943	137.235	137.235	-1390.762	0.000	-1431.679	-1390.762	-1255.343	219.931
	300.00	118.370	137.966	137.237	-1390.543	0.219	-1431.933	-1390.760	-1254.503	218.428
	400.00	135.677	174.611	142.117	-1377.764	12.998	-1447.609	-1389.986	-1209.170	157.901
	500.00	147.193	206.186	151.848	-1363.593	27.169	-1466.686	-1388.568	-1164.123	121.615
	600.00	156.430	233.861	163.257	-1348.399	42.363	-1488.716	-1392.321	-1118.915	97.410
	700.00	164.592	258.598	175.141	-1332.342	58.420	-1513.360	-1389.643	-1073.550	80.109
	800.00	172.179	281.076	186.998	-1315.500	75.262	-1540.361	-1386.360	-1028.611	67.161

References

Phase	H / S	C _p
SOL	Ku1	e

O[g]

OXYGEN (GAS)

15.999

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
							kJ / mol			
GAS	298.15	21.911	161.058	161.058	249.173	0.000	201.154	249.173	231.736	-40.599
	300.00	21.901	161.194	161.058	249.214	0.041	200.855	249.186	231.628	-40.330
	400.00	21.482	167.430	161.912	251.380	2.207	184.408	249.868	225.670	-29.469
	500.00	21.257	172.197	163.511	253.516	4.343	167.418	250.474	219.549	-22.936
	600.00	21.124	176.060	165.290	255.635	6.462	149.999	251.013	213.312	-18.570
	700.00	21.040	179.309	167.067	257.743	8.570	132.226	251.493	206.990	-15.446
	800.00	20.984	182.115	168.777	259.844	10.671	114.152	251.926	200.602	-13.098
	900.00	20.944	184.584	170.399	261.940	12.767	95.814	252.320	194.163	-11.269
	1000.00	20.915	186.789	171.929	264.033	14.860	77.244	252.681	187.681	-9.803
	1100.00	20.893	188.782	173.372	266.123	16.950	58.463	253.017	181.165	-8.603
	1200.00	20.877	190.599	174.733	268.212	19.039	39.493	253.331	174.619	-7.601
	1300.00	20.864	192.269	176.019	270.299	21.126	20.349	253.627	168.047	-6.752
	1400.00	20.853	193.815	177.235	272.385	23.212	1.043	253.906	161.453	-6.024
	1500.00	20.845	195.254	178.389	274.469	25.296	-18.411	254.170	154.840	-5.392
	1600.00	20.838	196.599	179.486	276.554	27.381	-38.004	254.421	148.210	-4.839
	1700.00	20.833	197.862	180.530	278.637	29.464	-57.728	254.658	141.565	-4.350
	1800.00	20.830	199.052	181.526	280.720	31.547	-77.574	254.884	134.906	-3.915
	1900.00	20.827	200.179	182.479	282.803	33.630	-97.536	255.097	128.234	-3.525
	2000.00	20.826	201.247	183.390	284.886	35.713	-117.608	255.298	121.552	-3.175
	2100.00	20.828	202.263	184.265	286.968	37.795	-137.784	255.488	114.860	-2.857
	2200.00	20.832	203.232	185.105	289.051	39.878	-158.059	255.667	108.159	-2.568
	2300.00	20.836	204.158	185.914	291.135	41.962	-178.429	255.835	101.450	-2.304
	2400.00	20.842	205.045	186.693	293.219	44.046	-198.889	255.992	94.735	-2.062
	2500.00	20.850	205.896	187.444	295.303	46.130	-219.437	256.139	88.013	-1.839
	2600.00	20.861	206.714	188.169	297.389	48.216	-240.067	256.277	81.285	-1.633
	2700.00	20.876	207.501	188.871	299.476	50.303	-260.778	256.405	74.552	-1.442
	2800.00	20.893	208.261	189.550	301.564	52.391	-281.567	256.525	67.814	-1.265
	2900.00	20.913	208.994	190.208	303.654	54.481	-302.430	256.636	61.073	-1.100
	3000.00	20.936	209.704	190.846	305.747	56.574	-323.365	256.740	54.327	-0.946
	3100.00	20.962	210.391	191.465	307.842	58.669	-344.370	256.837	47.579	-0.802
	3200.00	20.991	211.057	192.067	309.939	60.766	-365.442	256.928	40.827	-0.666
	3300.00	21.023	211.703	192.653	312.040	62.867	-386.580	257.013	34.072	-0.539
	3400.00	21.057	212.331	193.222	314.144	64.971	-407.782	257.093	27.315	-0.420
	3500.00	21.093	212.942	193.777	316.251	67.078	-429.046	257.169	20.556	-0.307
	3600.00	21.131	213.537	194.318	318.363	69.190	-450.370	257.240	13.795	-0.200
	3700.00	21.172	214.116	194.845	320.478	71.305	-471.753	257.308	7.031	-0.099
	3800.00	21.214	214.682	195.359	322.597	73.424	-493.193	257.373	0.266	-0.004
	3900.00	21.257	215.233	195.862	324.720	75.547	-514.689	257.436	-6.500	0.087
	4000.00	21.302	215.772	196.353	326.848	77.675	-536.239	257.496	-13.269	0.173
	4100.00	21.349	216.298	196.833	328.981	79.808	-557.843	257.554	-20.039	0.255
	4200.00	21.396	216.813	197.303	331.118	81.945	-579.498	257.611	-26.810	0.333
	4300.00	21.445	217.318	197.762	333.260	84.087	-601.205	257.666	-33.582	0.408
	4400.00	21.494	217.811	198.212	335.407	86.234	-622.962	257.720	-40.356	0.479
	4500.00	21.544	218.295	198.653	337.559	88.386	-644.767	257.773	-47.131	0.547
	4600.00	21.595	218.769	199.085	339.716	90.543	-666.620	257.825	-53.908	0.612
	4700.00	21.645	219.234	199.509	341.878	92.705	-688.520	257.876	-60.685	0.674
	4800.00	21.696	219.690	199.925	344.045	94.872	-710.467	257.925	-67.463	0.734
	4900.00	21.747	220.138	200.333	346.217	97.044	-732.458	257.974	-74.243	0.791
	5000.00	21.798	220.578	200.733	348.395	99.222	-754.494	258.020	-81.023	0.846

References

Phase	H / S	C _p
GAS	Ja2	Ja2

31.999

OXYGEN (GAS)

O2[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [—]
GAS	298.15	29.376	205.147	205.147	0.000	0.000	-61.165	0.000	0.000	0.000
	300.00	29.385	205.329	205.148	0.054	0.054	-61.544	0.000	0.000	0.000
	400.00	30.106	213.871	206.307	3.025	3.025	-82.523	0.000	0.000	0.000
	500.00	31.091	220.693	208.524	6.084	6.084	-104.262	0.000	0.000	0.000
	600.00	32.089	226.451	211.044	9.244	9.244	-126.626	0.000	0.000	0.000
	700.00	32.981	231.466	213.611	12.499	12.499	-149.528	0.000	0.000	0.000
	800.00	33.734	235.921	216.126	15.836	15.836	-172.901	0.000	0.000	0.000
	900.00	34.354	239.931	218.552	19.241	19.241	-196.697	0.000	0.000	0.000
	1000.00	34.870	243.578	220.875	22.703	22.703	-220.875	0.000	0.000	0.000
	1100.00	35.302	246.922	223.093	26.212	26.212	-245.402	0.000	0.000	0.000
	1200.00	35.667	250.010	225.209	29.761	29.761	-270.251	0.000	0.000	0.000
	1300.00	35.987	252.878	227.228	33.344	33.344	-295.397	0.000	0.000	0.000
	1400.00	36.276	255.555	229.157	36.957	36.957	-320.820	0.000	0.000	0.000
	1500.00	36.543	258.067	231.002	40.598	40.598	-346.503	0.000	0.000	0.000
	1600.00	36.797	260.434	232.768	44.266	44.266	-372.429	0.000	0.000	0.000
	1700.00	37.041	262.672	234.462	47.957	47.957	-398.585	0.000	0.000	0.000
	1800.00	37.278	264.796	236.089	51.673	51.673	-424.959	0.000	0.000	0.000
	1900.00	37.511	266.818	237.653	55.413	55.413	-451.541	0.000	0.000	0.000
	2000.00	37.741	268.748	239.160	59.176	59.176	-478.320	0.000	0.000	0.000
	2100.00	37.969	270.595	240.613	62.961	62.961	-505.288	0.000	0.000	0.000
	2200.00	38.194	272.366	242.017	66.769	66.769	-532.436	0.000	0.000	0.000
	2300.00	38.418	274.069	243.373	70.600	70.600	-559.759	0.000	0.000	0.000
	2400.00	38.638	275.709	244.687	74.453	74.453	-587.248	0.000	0.000	0.000
	2500.00	38.855	277.290	245.959	78.327	78.327	-614.898	0.000	0.000	0.000
	2600.00	39.069	278.818	247.194	82.224	82.224	-642.704	0.000	0.000	0.000
	2700.00	39.277	280.297	248.393	86.141	86.141	-670.660	0.000	0.000	0.000
	2800.00	39.479	281.729	249.558	90.079	90.079	-698.762	0.000	0.000	0.000
	2900.00	39.675	283.118	250.691	94.037	94.037	-727.005	0.000	0.000	0.000
	3000.00	39.862	284.466	251.795	98.013	98.013	-755.384	0.000	0.000	0.000
	3100.00	40.047	285.776	252.870	102.009	102.009	-783.897	0.000	0.000	0.000
	3200.00	40.224	287.050	253.918	106.023	106.023	-812.538	0.000	0.000	0.000
	3300.00	40.395	288.291	254.941	110.054	110.054	-841.306	0.000	0.000	0.000
	3400.00	40.559	289.499	255.940	114.101	114.101	-870.195	0.000	0.000	0.000
	3500.00	40.717	290.677	256.916	118.165	118.165	-899.204	0.000	0.000	0.000
	3600.00	40.868	291.826	257.869	122.245	122.245	-928.330	0.000	0.000	0.000
	3700.00	41.014	292.948	258.802	126.339	126.339	-957.569	0.000	0.000	0.000
	3800.00	41.154	294.044	259.715	130.447	130.447	-986.919	0.000	0.000	0.000
	3900.00	41.290	295.114	260.609	134.569	134.569	-1016.377	0.000	0.000	0.000
	4000.00	41.421	296.161	261.485	138.705	138.705	-1045.941	0.000	0.000	0.000
	4100.00	41.549	297.186	262.343	142.854	142.854	-1075.608	0.000	0.000	0.000
	4200.00	41.674	298.189	263.185	147.015	147.015	-1105.377	0.000	0.000	0.000
	4300.00	41.797	299.171	264.011	151.188	151.188	-1135.245	0.000	0.000	0.000
	4400.00	41.919	300.133	264.821	155.374	155.374	-1165.211	0.000	0.000	0.000
	4500.00	42.041	301.076	265.616	159.572	159.572	-1195.271	0.000	0.000	0.000
	4600.00	42.164	302.002	266.397	163.782	163.782	-1225.425	0.000	0.000	0.000
	4700.00	42.288	302.910	267.164	168.005	168.005	-1255.671	0.000	0.000	0.000
	4800.00	42.414	303.801	267.918	172.240	172.240	-1286.007	0.000	0.000	0.000
	4900.00	42.543	304.677	268.659	176.488	176.488	-1316.431	0.000	0.000	0.000
	5000.00	42.676	305.538	269.388	180.748	180.748	-1346.942	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Ja2	Ja2

O3[g]

OZONE (GAS)

47.998

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	39.250	238.932	238.932	143.093	0.000	71.855	143.093	163.602	-28.662
	300.00	39.322	239.175	238.933	143.166	0.073	71.413	143.084	163.730	-28.508
	400.00	43.714	251.087	240.527	147.317	4.224	46.882	142.779	170.667	-22.287
	500.00	47.301	261.249	243.680	151.877	8.784	21.253	142.751	177.646	-18.559
	600.00	49.876	270.113	247.362	156.743	13.650	-5.324	142.877	184.615	-16.072
	700.00	51.741	277.949	251.183	161.829	18.736	-32.735	143.081	191.556	-14.294
	800.00	53.130	284.953	254.975	167.076	23.983	-60.887	143.323	198.465	-12.958
	900.00	54.190	291.275	258.662	172.444	29.351	-89.703	143.583	205.342	-11.918
	1000.00	55.015	297.029	262.216	177.906	34.813	-119.123	143.852	212.190	-11.084
	1100.00	55.667	302.304	265.624	183.441	40.348	-149.093	144.123	219.011	-10.400
	1200.00	56.190	307.171	268.886	189.035	45.942	-179.570	144.394	225.807	-9.829
	1300.00	56.614	311.686	272.006	194.676	51.583	-210.515	144.660	232.580	-9.345
	1400.00	56.961	315.894	274.993	200.355	57.262	-241.897	144.919	239.333	-8.930
	1500.00	57.250	319.834	277.852	206.066	62.973	-273.685	145.169	246.069	-8.569
	1600.00	57.495	323.537	280.593	211.804	68.711	-305.856	145.406	252.787	-8.253
	1700.00	57.710	327.029	283.223	217.564	74.471	-338.386	145.628	259.492	-7.973
	1800.00	57.904	330.334	285.749	223.345	80.252	-371.255	145.835	266.184	-7.724
	1900.00	58.087	333.469	288.179	229.145	86.052	-404.447	146.025	272.865	-7.502
	2000.00	58.269	336.453	290.519	234.963	91.870	-437.944	146.199	279.536	-7.301

References

Phase	H / S	C _p
GAS	La1,Ja1	Ja1

18.013

HYDROXYL-D1 (GAS)

OD[g]

Phase	T [K]	C _p [$\frac{\text{J}}{\text{K mol}}$]	S J / (K mol)	-(G-H298)/T [$\frac{\text{kJ}}{\text{mol}}$]	H [$\frac{\text{kJ}}{\text{mol}}$]	H-H298 [$\frac{\text{kJ}}{\text{mol}}$]	G [$\frac{\text{kJ}}{\text{mol}}$]	ΔH_f [$\frac{\text{kJ}}{\text{mol}}$]	ΔG_f [$\frac{\text{kJ}}{\text{mol}}$]	log K _f [-]
GAS	298.15	29.989	189.651	189.651	36.602	0.000	-19.942	36.602	32.250	-5.650
	300.00	29.980	189.836	189.652	36.657	0.055	-20.293	36.603	32.223	-5.610
	400.00	29.704	198.415	190.823	39.639	3.037	-39.727	36.638	30.755	-4.016
	500.00	29.741	205.042	193.029	42.609	6.007	-59.912	36.614	29.286	-3.060
	600.00	30.026	210.487	195.498	45.595	8.993	-80.697	36.547	27.827	-2.423
	700.00	30.489	215.148	197.980	48.620	12.018	-101.984	36.454	26.380	-1.969
	800.00	31.057	219.256	200.387	51.697	15.095	-123.708	36.350	24.948	-1.629
	900.00	31.657	222.948	202.692	54.832	18.230	-145.821	36.244	23.530	-1.366
	1000.00	32.251	226.315	204.889	58.028	21.426	-168.287	36.141	22.122	-1.156
	1100.00	32.815	229.415	206.979	61.282	24.680	-191.075	36.044	20.725	-0.984
	1200.00	33.336	232.293	208.970	64.590	27.988	-214.162	35.953	19.337	-0.842
	1300.00	33.809	234.981	210.869	67.947	31.345	-237.528	35.868	17.956	-0.721
	1400.00	34.237	237.502	212.682	71.350	34.748	-261.153	35.788	16.581	-0.619
	1500.00	34.621	239.877	214.417	74.793	38.191	-285.023	35.711	15.212	-0.530
	1600.00	34.967	242.123	216.079	78.273	41.671	-309.124	35.636	13.847	-0.452
	1700.00	35.279	244.253	217.674	81.785	45.183	-333.444	35.562	12.488	-0.384
	1800.00	35.560	246.277	219.207	85.328	48.726	-357.971	35.487	11.133	-0.323
	1900.00	35.814	248.207	220.683	88.896	52.294	-382.696	35.410	9.782	-0.269
	2000.00	36.043	250.050	222.106	92.489	55.887	-407.610	35.330	8.435	-0.220
	2100.00	36.252	251.813	223.479	96.104	59.502	-432.703	35.247	7.092	-0.176
	2200.00	36.443	253.504	224.805	99.739	63.137	-457.970	35.159	5.754	-0.137
	2300.00	36.619	255.128	226.089	103.393	66.791	-483.402	35.065	4.419	-0.100
	2400.00	36.781	256.690	227.331	107.063	70.461	-508.993	34.965	3.089	-0.067
	2500.00	36.933	258.195	228.536	110.748	74.146	-534.738	34.859	1.763	-0.037
	2600.00	37.071	259.646	229.705	114.449	77.847	-560.631	34.746	0.441	-0.009
	2700.00	37.201	261.047	230.840	118.162	81.560	-586.666	34.625	-0.876	0.017
	2800.00	37.323	262.403	231.943	121.889	85.287	-612.838	34.498	-2.189	0.041
	2900.00	37.438	263.714	233.016	125.627	89.025	-639.145	34.362	-3.496	0.063
	3000.00	37.546	264.985	234.061	129.376	92.774	-665.580	34.220	-4.799	0.084
	3100.00	37.648	266.218	235.078	133.136	96.534	-692.140	34.070	-6.098	0.103
	3200.00	37.745	267.415	236.070	136.905	100.303	-718.822	33.912	-7.391	0.121
	3300.00	37.838	268.578	237.038	140.685	104.083	-745.622	33.746	-8.679	0.137
	3400.00	37.926	269.709	237.982	144.473	107.871	-772.537	33.573	-9.962	0.153
	3500.00	38.011	270.809	238.904	148.270	111.668	-799.563	33.393	-11.240	0.168
	3600.00	38.092	271.881	239.805	152.075	115.473	-826.698	33.205	-12.513	0.182
	3700.00	38.171	272.926	240.687	155.888	119.286	-853.938	33.009	-13.780	0.195
	3800.00	38.246	273.945	241.548	159.709	123.107	-881.282	32.806	-15.042	0.207
	3900.00	38.320	274.939	242.392	163.537	126.935	-908.727	32.596	-16.298	0.218
	4000.00	38.391	275.911	243.218	167.373	130.771	-936.269	32.379	-17.549	0.229
	4100.00	38.460	276.859	244.027	171.215	134.613	-963.908	32.154	-18.794	0.239
	4200.00	38.528	277.787	244.820	175.065	138.463	-991.640	31.922	-20.034	0.249
	4300.00	38.594	278.694	245.597	178.921	142.319	-1019.465	31.682	-21.269	0.258
	4400.00	38.659	279.582	246.359	182.784	146.182	-1047.379	31.436	-22.497	0.267
	4500.00	38.722	280.452	247.107	186.653	150.051	-1075.380	31.182	-23.720	0.275
	4600.00	38.785	281.304	247.841	190.528	153.926	-1103.468	30.921	-24.937	0.283
	4700.00	38.846	282.138	248.562	194.409	157.807	-1131.641	30.652	-26.149	0.291
	4800.00	38.907	282.957	249.270	198.297	161.695	-1159.896	30.377	-27.354	0.298
	4900.00	38.967	283.760	249.966	202.191	165.589	-1188.231	30.093	-28.554	0.304
	5000.00	39.026	284.547	250.650	206.090	169.488	-1216.647	29.803	-29.748	0.311

References

Phase	H / S	C _p
GAS	Ja2	Ja2

OF2[g]

OXYGEN DIFLUORIDE (GAS)

53.996

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	43.092	247.468	247.468	24.518	0.000	-49.264	24.518	41.781	-7.320
	300.00	43.224	247.734	247.468	24.598	0.080	-49.722	24.513	41.888	-7.293
	400.00	48.091	260.923	249.233	29.194	4.676	-75.175	24.410	47.704	-6.229
	500.00	50.664	271.956	252.706	34.143	9.625	-101.835	24.466	53.522	-5.591
	600.00	52.302	281.347	256.717	39.296	14.778	-129.512	24.567	59.324	-5.165
	700.00	53.473	289.502	260.831	44.588	20.070	-158.063	24.681	65.108	-4.858
	800.00	54.370	296.703	264.873	49.982	25.464	-187.381	24.800	70.876	-4.628
	900.00	55.088	303.150	268.774	55.456	30.938	-217.379	24.924	76.628	-4.447
	1000.00	55.675	308.985	272.508	60.995	36.477	-247.990	25.052	82.366	-4.302
	1100.00	56.158	314.315	276.070	66.588	42.070	-279.159	25.183	88.091	-4.183
	1200.00	56.556	319.219	279.464	72.224	47.706	-310.839	25.317	93.804	-4.083
	1300.00	56.877	323.759	282.699	77.896	53.378	-342.991	25.451	99.505	-3.998
	1400.00	57.129	327.984	285.785	83.597	59.079	-375.580	25.582	105.197	-3.925
	1500.00	57.317	331.932	288.731	89.320	64.802	-408.578	25.708	110.879	-3.861
	1600.00	57.445	335.636	291.548	95.058	70.540	-441.959	25.823	116.554	-3.805
	1700.00	57.513	339.121	294.245	100.807	76.289	-475.698	25.924	122.221	-3.755
	1800.00	57.525	342.409	296.830	106.559	82.041	-509.776	26.005	127.883	-3.711
	1900.00	57.481	345.518	299.312	112.310	87.792	-544.174	26.064	133.541	-3.671
	2000.00	57.382	348.464	301.696	118.054	93.536	-578.875	26.093	139.197	-3.635
	2100.00	57.229	351.260	303.990	123.785	99.267	-613.862	26.090	144.852	-3.603
	2200.00	57.023	353.918	306.200	129.498	104.980	-649.122	26.048	150.508	-3.574
	2273.00	56.840	355.777	307.763	133.654	109.136	-675.026	25.991	154.639	-3.554

References

Phase	H / S	C _p
GAS	Ja1	Ja1

17.007

HYDROXYL (GAS)

OH[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [— —]
GAS	298.15	29.986	183.708	183.708	38.987	0.000	–15.786	38.987	34.278	–6.005
	300.00	29.977	183.893	183.709	39.042	0.055	–16.126	38.989	34.249	–5.963
	400.00	29.651	192.466	184.880	42.022	3.035	–34.965	39.029	32.660	–4.265
	500.00	29.519	199.066	187.082	44.979	5.992	–54.554	38.996	31.070	–3.246
	600.00	29.527	204.446	189.541	47.930	8.943	–74.738	38.903	29.493	–2.568
	700.00	29.665	209.007	192.004	50.889	11.902	–95.416	38.765	27.935	–2.085
	800.00	29.917	212.983	194.383	53.867	14.880	–116.520	38.598	26.400	–1.724
	900.00	30.263	216.526	196.650	56.875	17.888	–137.998	38.417	24.886	–1.444
	1000.00	30.675	219.735	198.801	59.922	20.935	–159.814	38.230	23.392	–1.222
	1100.00	31.126	222.680	200.839	63.011	24.024	–181.936	38.046	21.917	–1.041
	1200.00	31.585	225.408	202.775	66.147	27.160	–204.342	37.868	20.459	–0.891
	1300.00	32.044	227.954	204.615	69.329	30.342	–227.012	37.698	19.015	–0.764
	1400.00	32.491	230.345	206.368	72.556	33.569	–249.928	37.536	17.584	–0.656
	1500.00	32.918	232.602	208.042	75.826	36.839	–273.077	37.382	16.164	–0.563
	1600.00	33.320	234.739	209.645	79.138	40.151	–296.445	37.235	14.755	–0.482
	1700.00	33.695	236.771	211.181	82.489	43.502	–320.021	37.093	13.354	–0.410
	1800.00	34.044	238.707	212.657	85.876	46.889	–343.795	36.956	11.962	–0.347
	1900.00	34.369	240.556	214.077	89.297	50.310	–367.759	36.820	10.577	–0.291
	2000.00	34.670	242.327	215.446	92.749	53.762	–391.904	36.686	9.199	–0.240
	2100.00	34.949	244.025	216.766	96.230	57.243	–416.222	36.552	7.828	–0.195
	2200.00	35.208	245.657	218.043	99.738	60.751	–440.707	36.416	6.463	–0.153
	2300.00	35.449	247.227	219.278	103.271	64.284	–465.352	36.278	5.105	–0.116
	2400.00	35.673	248.741	220.474	106.828	67.841	–490.150	36.137	3.752	–0.082
	2500.00	35.881	250.201	221.634	110.406	71.419	–515.098	35.993	2.406	–0.050
	2600.00	36.076	251.613	222.760	114.003	75.016	–540.189	35.844	1.065	–0.021
	2700.00	36.257	252.977	223.854	117.620	78.633	–565.419	35.690	–0.269	0.005
	2800.00	36.427	254.299	224.918	121.255	82.268	–590.783	35.531	–1.598	0.030
	2900.00	36.586	255.580	225.953	124.905	85.918	–616.277	35.366	–2.921	0.053
	3000.00	36.736	256.823	226.962	128.571	89.584	–641.898	35.195	–4.239	0.074
	3100.00	36.878	258.030	227.944	132.252	93.265	–667.641	35.018	–5.550	0.094
	3200.00	37.012	259.203	228.903	135.947	96.960	–693.503	34.834	–6.856	0.112
	3300.00	37.139	260.344	229.839	139.654	100.667	–719.480	34.645	–8.156	0.129
	3400.00	37.261	261.454	230.752	143.374	104.387	–745.571	34.449	–9.450	0.145
	3500.00	37.377	262.536	231.645	147.106	108.119	–771.770	34.246	–10.738	0.160
	3600.00	37.486	263.591	232.518	150.849	111.862	–798.077	34.037	–12.020	0.174
	3700.00	37.592	264.619	233.372	154.603	115.616	–824.488	33.822	–13.297	0.188
	3800.00	37.693	265.623	234.207	158.368	119.381	–851.000	33.600	–14.567	0.200
	3900.00	37.791	266.603	235.025	162.142	123.155	–877.611	33.371	–15.832	0.212
	4000.00	37.885	267.561	235.827	165.926	126.939	–904.320	33.136	–17.091	0.223
	4100.00	37.976	268.498	236.612	169.719	130.732	–931.123	32.895	–18.343	0.234
	4200.00	38.064	269.414	237.382	173.521	134.534	–958.019	32.647	–19.590	0.244
	4300.00	38.150	270.311	238.138	177.332	138.345	–985.005	32.392	–20.831	0.253
	4400.00	38.233	271.189	238.879	181.151	142.164	–1012.080	32.130	–22.065	0.262
	4500.00	38.315	272.049	239.607	184.978	145.991	–1039.242	31.862	–23.294	0.270
	4600.00	38.394	272.892	240.321	188.814	149.827	–1066.490	31.587	–24.517	0.278
	4700.00	38.472	273.719	241.023	192.657	153.670	–1093.820	31.306	–25.733	0.286
	4800.00	38.549	274.529	241.712	196.508	157.521	–1121.233	31.018	–26.944	0.293
	4900.00	38.625	275.325	242.390	200.367	161.380	–1148.726	30.722	–28.149	0.300
	5000.00	38.699	276.106	243.057	204.233	165.246	–1176.297	30.421	–29.347	0.307

References

Phase	H / S	C _p
GAS	Ja2	Ja2

Os

OSMIUM

190.200

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	24.708	32.635	32.635	0.000	0.000	-9.730	0.000	0.000	0.000
	300.00	24.715	32.788	32.636	0.046	0.046	-9.791	0.000	0.000	0.000
	400.00	25.096	39.950	33.610	2.536	2.536	-13.444	0.000	0.000	0.000
	500.00	25.476	45.591	35.461	5.065	5.065	-17.731	0.000	0.000	0.000
	600.00	25.857	50.270	37.550	7.632	7.632	-22.530	0.000	0.000	0.000
	700.00	26.238	54.284	39.661	10.236	10.236	-27.763	0.000	0.000	0.000
	800.00	26.619	57.813	41.714	12.879	12.879	-33.371	0.000	0.000	0.000
	900.00	26.999	60.970	43.681	15.560	15.560	-39.313	0.000	0.000	0.000
	1000.00	27.380	63.834	45.555	18.279	18.279	-45.555	0.000	0.000	0.000
	1100.00	27.761	66.462	47.338	21.036	21.036	-52.072	0.000	0.000	0.000
	1200.00	28.142	68.893	49.034	23.831	23.831	-58.841	0.000	0.000	0.000
	1300.00	28.522	71.161	50.650	26.664	26.664	-65.845	0.000	0.000	0.000
	1400.00	28.903	73.289	52.192	29.536	29.536	-73.069	0.000	0.000	0.000
	1500.00	29.284	75.296	53.666	32.445	32.445	-80.499	0.000	0.000	0.000
	1600.00	29.665	77.198	55.078	35.392	35.392	-88.124	0.000	0.000	0.000
	1700.00	30.045	79.008	56.432	38.378	38.378	-95.935	0.000	0.000	0.000
	1800.00	30.426	80.736	57.735	41.402	41.402	-103.923	0.000	0.000	0.000
	1900.00	30.807	82.391	58.989	44.463	44.463	-112.080	0.000	0.000	0.000
	2000.00	31.188	83.981	60.200	47.563	47.563	-120.399	0.000	0.000	0.000
	2100.00	31.569	85.512	61.369	50.701	50.701	-128.874	0.000	0.000	0.000
	2200.00	31.949	86.989	62.500	53.877	53.877	-137.500	0.000	0.000	0.000
	2300.00	32.330	88.418	63.596	57.091	57.091	-146.270	0.000	0.000	0.000
	2400.00	32.711	89.802	64.659	60.343	60.343	-155.182	0.000	0.000	0.000
	2500.00	33.092	91.145	65.692	63.633	63.633	-164.229	0.000	0.000	0.000
	2600.00	33.472	92.450	66.696	66.961	66.961	-173.410	0.000	0.000	0.000
	2700.00	33.853	93.721	67.673	70.327	70.327	-182.718	0.000	0.000	0.000
	2800.00	34.234	94.959	68.626	73.732	73.732	-192.153	0.000	0.000	0.000
	2900.00	34.615	96.167	69.555	77.174	77.174	-201.709	0.000	0.000	0.000
	3000.00	34.995	97.346	70.462	80.655	80.655	-211.385	0.000	0.000	0.000
	3100.00	35.376	98.500	71.348	84.173	84.173	-221.177	0.000	0.000	0.000
	3200.00	35.757	99.629	72.214	87.730	87.730	-231.084	0.000	0.000	0.000
	3300.00	36.138	100.735	73.061	91.324	91.324	-241.103	0.000	0.000	0.000
LIQ			9.623		31.757					
	3300.00	35.982	110.359	73.061	123.081	123.081	-241.103	0.000	0.000	0.000
	3400.00	35.982	111.433	74.174	126.680	126.680	-252.192	0.000	0.000	0.000
	3500.00	35.982	112.476	75.254	130.278	130.278	-263.388	0.000	0.000	0.000
	3600.00	35.982	113.490	76.302	133.876	133.876	-274.687	0.000	0.000	0.000
	3700.00	35.982	114.476	77.320	137.474	137.474	-286.085	0.000	0.000	0.000
	3800.00	35.982	115.435	78.311	141.073	141.073	-297.581	0.000	0.000	0.000
	3900.00	35.982	116.370	79.275	144.671	144.671	-309.171	0.000	0.000	0.000
	4000.00	35.982	117.281	80.214	148.269	148.269	-320.854	0.000	0.000	0.000
	4100.00	35.982	118.169	81.128	151.867	151.867	-332.627	0.000	0.000	0.000
	4200.00	35.982	119.036	82.021	155.466	155.466	-344.487	0.000	0.000	0.000
	4300.00	35.982	119.883	82.891	159.064	159.064	-356.433	0.000	0.000	0.000
	4400.00	35.982	120.710	83.742	162.662	162.662	-368.463	0.000	0.000	0.000
	4500.00	35.982	121.519	84.572	166.260	166.260	-380.575	0.000	0.000	0.000

190.200

OSMIUM [continued]

Os

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
LIQ	4600.00	35.982	122.310	85.384	169.859	169.859	-392.766	0.000	0.000	0.000
	4700.00	35.982	123.084	86.178	173.457	173.457	-405.036	0.000	0.000	0.000
	4800.00	35.982	123.841	86.955	177.055	177.055	-417.383	0.000	0.000	0.000
	4900.00	35.982	124.583	87.715	180.653	180.653	-429.804	0.000	0.000	0.000
	5000.00	35.982	125.310	88.460	184.252	184.252	-442.299	0.000	0.000	0.000
	5100.00	35.982	126.023	89.189	187.850	187.850	-454.865	0.000	0.000	0.000
	5200.00	35.982	126.721	89.904	191.448	191.448	-467.503	0.000	0.000	0.000
	5281.00	35.982	127.277	90.473	194.363	194.363	-477.790	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL	Hu1	Hu1	
LIQ	Hu1	Hu1	Hu1 BPT= 5281., L= 746.0 kJ

Os[g]		OSMIUM (GAS)								190.200
Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	20.784	192.569	192.569	788.266	0.000	730.851	788.266	740.582	-129.747
	300.00	20.788	192.698	192.570	788.304	0.038	730.495	788.259	740.286	-128.895
	400.00	20.823	198.687	193.386	790.386	2.120	710.912	787.850	724.355	-94.591
	500.00	20.885	203.337	194.928	792.471	4.205	690.802	787.406	708.533	-74.020
	600.00	21.092	207.161	196.658	794.568	6.302	670.271	786.937	692.802	-60.314
	700.00	21.440	210.437	198.397	796.694	8.428	649.388	786.457	677.150	-50.530
	800.00	21.908	213.329	200.087	798.860	10.594	628.197	785.981	661.568	-43.196
	900.00	22.472	215.941	201.705	801.078	12.812	606.731	785.518	646.044	-37.495
	1000.00	23.110	218.341	203.250	803.357	15.091	585.016	785.078	630.571	-32.938
	1100.00	23.801	220.576	204.725	805.702	17.436	563.068	784.666	615.140	-29.211
	1200.00	24.522	222.678	206.134	808.118	19.852	540.905	784.287	599.746	-26.106
	1300.00	25.254	224.669	207.484	810.607	22.341	518.537	783.943	584.382	-23.481
	1400.00	25.976	226.568	208.780	813.169	24.903	495.974	783.633	569.043	-21.231
	1500.00	26.669	228.384	210.027	815.801	27.535	473.226	783.356	553.724	-19.282
	1600.00	27.311	230.126	211.229	818.501	30.235	450.300	783.108	538.424	-17.578
	1700.00	27.883	231.799	212.390	821.261	32.995	427.203	782.883	523.138	-16.074
	1800.00	28.366	233.407	213.513	824.074	35.808	403.942	782.673	507.865	-14.738
	1900.00	28.863	234.954	214.601	826.937	38.671	380.524	782.473	492.604	-13.543
	2000.00	29.292	236.446	215.656	829.845	41.579	356.953	782.282	477.352	-12.467
	2100.00	29.677	237.884	216.681	832.794	44.528	333.236	782.093	462.110	-11.494
	2200.00	30.030	239.273	217.676	835.779	47.513	309.378	781.902	446.878	-10.610
	2300.00	30.360	240.616	218.645	838.799	50.533	285.383	781.708	431.654	-9.803
	2400.00	30.673	241.914	219.587	841.851	53.585	261.256	781.508	416.438	-9.064
	2500.00	30.973	243.173	220.506	844.933	56.667	237.002	781.300	401.231	-8.383
	2600.00	31.263	244.393	221.401	848.045	59.779	212.623	781.084	386.033	-7.755
	2700.00	31.546	245.578	222.275	851.185	62.919	188.124	780.858	370.843	-7.174
	2800.00	31.822	246.731	223.128	854.354	66.088	163.508	780.622	355.661	-6.635
	2900.00	32.093	247.852	223.961	857.550	69.284	138.779	780.376	340.488	-6.133
	3000.00	32.358	248.944	224.776	860.772	72.506	113.939	780.118	325.324	-5.664
	3100.00	32.620	250.010	225.573	864.021	75.755	88.991	779.848	310.169	-5.226
	3200.00	32.877	251.049	226.353	867.296	79.030	63.938	779.566	295.022	-4.816
	3300.00	33.129	252.065	227.116	870.596	82.330	38.782	779.272	279.885	-4.430
	3400.00	33.378	253.058	227.865	873.922	85.656	13.526	747.242	265.718	-4.082
	3500.00	33.622	254.029	228.599	877.272	89.006	-11.829	746.994	251.559	-3.754
	3600.00	33.861	254.979	229.318	880.646	92.380	-37.279	746.770	237.407	-3.445
	3700.00	34.095	255.910	230.024	884.044	95.778	-62.824	746.569	223.261	-3.152
	3800.00	34.325	256.823	230.718	887.465	99.199	-88.461	746.392	209.120	-2.875
	3900.00	34.549	257.717	231.398	890.909	102.643	-114.188	746.238	194.983	-2.612
	4000.00	34.767	258.594	232.067	894.374	106.108	-140.004	746.105	180.851	-2.362
	4100.00	34.979	259.456	232.725	897.862	109.596	-165.906	745.994	166.721	-2.124
	4200.00	35.185	260.301	233.371	901.370	113.104	-191.894	745.904	152.593	-1.898
	4300.00	35.385	261.131	234.007	904.899	116.633	-217.966	745.835	138.467	-1.682
	4400.00	35.577	261.947	234.633	908.447	120.181	-244.120	745.785	124.343	-1.476
	4500.00	35.763	262.749	235.249	912.014	123.748	-270.355	745.753	110.220	-1.279

190.200

OSMIUM (GAS) [continued]

Os[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
GAS	4600.00	35.941	263.537	235.855	915.599	127.333	–296.669	745.740	96.097	–1.091
	4700.00	36.112	264.311	236.453	919.202	130.936	–323.062	745.745	81.974	–0.911
	4800.00	36.274	265.073	237.041	922.821	134.555	–349.531	745.766	67.852	–0.738
	4900.00	36.429	265.823	237.621	926.456	138.190	–376.076	745.803	53.728	–0.573
	5000.00	36.574	266.560	238.192	930.107	141.841	–402.695	745.855	39.603	–0.414
	5100.00	36.711	267.286	238.756	933.771	145.505	–429.388	745.921	25.478	–0.261
	5200.00	36.839	268.000	239.311	937.449	149.183	–456.152	746.001	11.351	–0.114
	5300.00	36.957	268.703	239.859	941.138	152.872	–482.987	0.000	0.000	0.000
	5400.00	37.066	269.395	240.400	944.840	156.574	–509.892	0.000	0.000	0.000
	5500.00	37.165	270.076	240.933	948.551	160.285	–536.866	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

222.199

OSMIUM DIOXIDE

OsO2

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
SOL	298.15	57.094	51.882	51.882	–294.972	0.000	–310.440	–294.972	–239.546	41.967
	300.00	57.310	52.235	51.883	–294.866	0.106	–310.537	–294.966	–239.202	41.649
	400.00	65.242	69.951	54.244	–288.689	6.283	–316.670	–294.251	–220.703	28.821
	500.00	69.471	85.003	58.931	–281.936	13.036	–324.438	–293.085	–202.445	21.149
	600.00	72.242	97.929	64.379	–274.842	20.130	–333.600	–291.718	–184.443	16.057
	700.00	74.325	109.227	69.996	–267.510	27.462	–343.969	–290.245	–166.679	12.438
	800.00	76.041	119.267	75.539	–259.989	34.983	–355.403	–288.704	–149.131	9.737
	900.00	77.544	128.312	80.908	–252.309	42.663	–367.790	–287.110	–131.780	7.648
	1000.00	78.914	136.554	86.067	–244.485	50.487	–381.039	–285.467	–114.609	5.987
	1100.00	80.198	144.136	91.006	–236.529	58.443	–395.078	–283.777	–97.604	4.635
	1200.00	81.423	151.167	95.730	–228.447	66.525	–409.848	–282.039	–80.756	3.515

References

Phase	H / S	C _p
SOL	F2	F2

OsO4

OSMIUM TETRAOXIDE (YELLOW)

254.198

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	151.461	143.900	143.900	-394.099	0.000	-437.003	-394.099	-304.944	53.425
	300.00	151.461	144.837	143.903	-393.819	0.280	-437.270	-393.973	-304.391	52.999
	304.00	151.461	146.843	143.929	-393.213	0.886	-437.853	-393.701	-303.198	52.097
			46.931		14.267					
LIQ	304.00	157.737	193.774	143.929	-378.946	15.153	-437.853	-379.434	-303.198	52.097
	400.00	157.737	237.063	161.324	-363.803	30.296	-458.628	-372.390	-280.139	36.582

References

Phase	H / S	C _p
SOL	Nb1	e
LIQ	Tk1	e

OsO4[g]

OSMIUM TETRAOXIDE (GAS)

254.198

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	74.164	293.801	293.801	-337.201	0.000	-424.798	-337.201	-292.738	51.287
	300.00	74.423	294.261	293.803	-337.064	0.137	-425.342	-337.218	-292.463	50.922
	400.00	84.234	317.175	296.860	-329.075	8.126	-455.945	-337.662	-277.455	36.232
	500.00	89.872	336.621	302.919	-320.350	16.851	-488.661	-337.583	-262.406	27.413
	600.00	93.868	353.376	309.965	-311.154	26.047	-523.180	-337.273	-247.397	21.538
	700.00	97.087	368.095	317.239	-301.602	35.599	-559.268	-336.835	-232.450	17.346
	800.00	99.894	381.246	324.432	-291.750	45.451	-596.747	-336.300	-217.574	14.206
	900.00	102.459	393.161	331.417	-281.631	55.570	-635.476	-335.673	-202.770	11.768
	1000.00	104.876	404.083	338.145	-271.263	65.938	-675.346	-334.948	-188.041	9.822

References

Phase	H / S	C _p
GAS	Nb1	Ku1,e

252.148

OSMIUM DIPHOSPHIDE

OsP₂

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	71.141	82.006	82.006	–152.298	0.000	–176.748	–152.298	–142.528	24.970
	300.00	71.170	82.447	82.008	–152.166	0.132	–176.900	–152.300	–142.467	24.806
	400.00	72.718	103.133	84.818	–144.972	7.326	–186.225	–154.099	–138.782	18.123
	500.00	74.266	119.526	90.175	–137.623	14.675	–197.386	–154.544	–134.899	14.093
	600.00	75.814	133.203	96.237	–130.119	22.179	–210.040	–154.872	–130.937	11.399
	700.00	77.362	145.006	102.380	–122.460	29.838	–223.964	–155.083	–126.930	9.472
	800.00	78.910	155.437	108.373	–114.646	37.652	–238.996	–155.177	–122.900	8.025
	900.00	80.458	164.821	114.132	–106.678	45.620	–255.017	–155.155	–118.866	6.899
	1000.00	82.006	173.378	119.635	–98.555	53.743	–271.933	–155.016	–114.840	5.999
	1100.00	83.554	181.267	124.884	–90.277	62.021	–289.670	–154.760	–110.834	5.263
	1200.00	85.103	188.603	129.891	–81.844	70.454	–308.168	–281.530	–104.678	4.556
	1300.00	86.651	195.476	134.675	–73.256	79.042	–327.375	–279.491	–90.022	3.617
	1400.00	88.199	201.954	139.251	–64.514	87.784	–347.250	–277.345	–75.527	2.818

References

Phase	H / S	C _p
SOL	Tk1/Ku1	e

254.332

OSMIUM DISULFIDE

OsS₂

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	62.180	54.392	54.392	–147.695	0.000	–163.912	–147.695	–135.067	23.663
	300.00	62.323	54.777	54.393	–147.580	0.115	–164.013	–147.710	–134.988	23.504
	400.00	67.779	73.542	56.915	–141.044	6.651	–170.461	–152.827	–130.462	17.037
	500.00	70.940	89.030	61.835	–134.097	13.598	–178.612	–156.213	–124.519	13.008
	600.00	73.198	102.172	67.490	–126.886	20.809	–188.189	–158.720	–117.925	10.266
	700.00	75.029	113.597	73.278	–119.472	28.223	–198.990	–160.530	–110.979	8.281
	800.00	76.634	123.723	78.963	–111.887	35.808	–210.865	–162.308	–103.781	6.776
	900.00	78.106	132.835	84.451	–104.149	43.546	–223.701	–269.664	–94.052	5.459
	1000.00	79.496	141.137	89.710	–96.269	51.426	–237.405	–268.173	–74.618	3.898
	1100.00	80.833	148.776	94.737	–88.252	59.443	–251.906	–266.598	–55.338	2.628
	1200.00	82.133	155.866	99.539	–80.103	67.592	–267.142	–264.941	–36.205	1.576
	1300.00	83.407	162.490	104.130	–71.826	75.869	–283.064	–263.205	–17.214	0.692
	1400.00	84.663	168.717	108.523	–63.423	84.272	–299.627	–261.391	1.641	–0.061

References

Phase	H / S	C _p
SOL	Mi1	Mi1

OsSe2

OSMIUM DISELENIDE

348.120

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	65.626	81.588	81.588	-120.081	0.000	-144.406	-120.081	-109.478	19.180
	300.00	65.663	81.994	81.589	-119.960	0.121	-144.558	-120.099	-109.412	19.050
	400.00	66.588	101.053	84.181	-113.332	6.749	-153.754	-121.298	-105.681	13.801
	500.00	66.421	115.905	89.097	-106.677	13.404	-164.629	-134.792	-101.423	10.596
	600.00	65.824	127.967	94.602	-100.062	20.019	-176.842	-137.773	-94.471	8.224
	700.00	65.023	138.055	100.109	-93.519	26.562	-190.157	-140.863	-87.012	6.493
	800.00	64.115	146.679	105.405	-87.061	33.020	-204.405	-144.078	-79.101	5.165
	900.00	63.143	154.175	110.416	-80.698	39.383	-219.456	-147.424	-70.779	4.108
	1000.00	62.132	160.776	115.129	-74.434	45.647	-235.210	-150.908	-62.078	3.243
	1100.00	61.096	166.650	119.551	-68.272	51.809	-251.587	-161.156	-43.112	2.047
	1200.00	60.043	171.921	123.699	-62.215	57.866	-268.520	-162.030	-23.252	1.012

References

Phase	H / S	C _p
SOL	Mi1	Mi1

P

PHOSPHORUS (WHITE)

30.974

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL-A	298.15	23.836	41.070	41.070	0.000	0.000	-12.245	0.000	0.000	0.000
	300.00	23.866	41.218	41.070	0.044	0.044	-12.321	0.000	0.000	0.000
	317.30	24.139	42.563	41.115	0.459	0.459	-13.046	0.000	0.000	0.000
LIQ			2.077		0.659					
	317.30	26.326	44.640	41.115	1.118	1.118	-13.046	0.000	0.000	0.000
	400.00	26.326	50.738	42.499	3.296	3.296	-17.000	0.000	0.000	0.000
	500.00	26.326	56.612	44.756	5.928	5.928	-22.378	0.000	0.000	0.000
	600.00	26.326	61.412	47.144	8.561	8.561	-28.286	0.000	0.000	0.000
	700.00	26.326	65.470	49.480	11.193	11.193	-34.636	0.000	0.000	0.000
	800.00	26.326	68.985	51.703	13.826	13.826	-41.362	0.000	0.000	0.000
	900.00	26.326	72.086	53.799	16.459	16.459	-48.419	0.000	0.000	0.000
	1000.00	26.326	74.860	55.769	19.091	19.091	-55.769	0.000	0.000	0.000
	1100.00	26.326	77.369	57.620	21.724	21.724	-63.382	0.000	0.000	0.000
	1180.01	26.326	79.217	59.023	23.830	23.830	-69.647	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL-A	Ja2	Ja1	
LIQ	Ja2	Ja2	Ja2 BPT= 1180.008 GAS (P2), L= 63.728 / NBPT= 550., GAS (P4)

30.974

PHOSPHORUS (GAS)

P[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	20.786	163.198	163.198	316.390	0.000	267.733	316.390	279.978	-49.051
	300.00	20.786	163.327	163.198	316.428	0.038	267.430	316.384	279.752	-48.709
	400.00	20.786	169.306	164.014	318.507	2.117	250.785	315.212	267.784	-34.969
	500.00	20.786	173.945	165.553	320.586	4.196	233.613	314.658	255.991	-26.743
	600.00	20.786	177.734	167.277	322.664	6.274	216.024	314.104	244.310	-21.269
	700.00	20.786	180.939	169.006	324.743	8.353	198.086	313.550	232.722	-17.366
	800.00	20.786	183.714	170.675	326.822	10.432	179.850	312.996	221.213	-14.444
	900.00	20.786	186.162	172.262	328.900	12.510	161.354	312.442	209.773	-12.175
	1000.00	20.786	188.352	173.764	330.979	14.589	142.626	311.888	198.395	-10.363
	1100.00	20.789	190.334	175.181	333.058	16.668	123.690	311.334	187.073	-8.883
	1200.00	20.792	192.143	176.521	335.137	18.747	104.565	247.209	176.890	-7.700
	1300.00	20.798	193.807	177.787	337.216	20.826	85.267	247.431	171.021	-6.872
	1400.00	20.811	195.349	178.987	339.296	22.906	65.808	247.648	165.135	-6.161
	1500.00	20.833	196.785	180.126	341.378	24.988	46.200	247.864	159.234	-5.545
	1600.00	20.867	198.131	181.210	343.463	27.073	26.454	248.078	153.318	-5.005
	1700.00	20.916	199.397	182.243	345.552	29.162	6.577	248.293	147.389	-4.529
	1800.00	20.982	200.595	183.230	347.647	31.257	-13.423	248.512	141.447	-4.105
	1900.00	21.070	201.731	184.174	349.749	33.359	-33.540	248.735	135.493	-3.725
	2000.00	21.180	202.815	185.079	351.862	35.472	-53.768	248.966	129.527	-3.383

References

Phase	H / S	C _p
GAS	Ja2	Ja1

30.974

PHOSPHORUS (RED)

P[R]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL-5	298.15	21.191	22.850	22.850	-17.460	0.000	-24.273	-17.460	-12.028	2.107
	300.00	21.247	22.981	22.850	-17.421	0.039	-24.315	-17.465	-11.994	2.088
	400.00	23.180	29.394	23.712	-15.187	2.273	-26.945	-18.483	-9.945	1.299
	500.00	24.484	34.709	25.395	-12.803	4.657	-30.157	-18.731	-7.779	0.813
	600.00	25.795	39.288	27.337	-10.290	7.170	-33.862	-18.850	-5.576	0.485
	700.00	27.196	43.368	29.341	-7.641	9.819	-37.998	-18.834	-3.363	0.251
	800.00	28.689	47.096	31.330	-4.847	12.613	-42.524	-18.673	-1.162	0.076
	870.00	29.782	49.547	32.698	-2.801	14.659	-45.907	-18.470	0.363	-0.022

References

Phase	H / S	C _p	Remarks
SOL-5	Ja2	Ja1	Ja2 NSPT= 704. GAS (P4), L= 128.74 kJ / MPT= 870., L= 18.8 kJ

P2[g]

PHOSPHORUS (GAS)

61.948

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	32.039	218.130	218.130	143.650	0.000	78.615	143.650	103.105	-18.063
	300.00	32.071	218.328	218.131	143.709	0.059	78.211	143.621	102.853	-17.908
	400.00	33.673	227.784	219.409	147.000	3.350	55.886	140.409	89.885	-11.738
	500.00	34.778	235.426	221.872	150.427	6.777	32.714	138.570	77.470	-8.093
	600.00	35.507	241.835	224.680	153.943	10.293	8.842	136.822	65.415	-5.695
	700.00	36.004	247.348	227.534	157.520	13.870	-15.623	135.134	53.648	-4.003
	800.00	36.357	252.180	230.319	161.139	17.489	-40.605	133.487	42.120	-2.750
	900.00	36.618	256.478	232.991	164.789	21.139	-66.042	131.872	30.796	-1.787
	1000.00	36.818	260.347	235.536	168.461	24.811	-91.886	130.279	19.651	-1.026
	1100.00	36.975	263.864	237.954	172.151	28.501	-118.099	128.703	8.665	-0.411
	1200.00	37.102	267.087	240.249	175.855	32.205	-144.649	0.000	0.000	0.000
	1300.00	37.208	270.061	242.430	179.571	35.921	-171.509	0.000	0.000	0.000
	1400.00	37.297	272.822	244.503	183.296	39.646	-198.654	0.000	0.000	0.000
	1500.00	37.374	275.397	246.478	187.030	43.380	-226.067	0.000	0.000	0.000
	1600.00	37.441	277.812	248.362	190.770	47.120	-253.728	0.000	0.000	0.000
	1700.00	37.501	280.083	250.161	194.518	50.868	-281.624	0.000	0.000	0.000
	1800.00	37.555	282.228	251.884	198.270	54.620	-309.741	0.000	0.000	0.000
	1900.00	37.604	284.260	253.535	202.028	58.378	-338.066	0.000	0.000	0.000
	2000.00	37.649	286.190	255.120	205.791	62.141	-366.590	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Ja2	Ja1

123.895

PHOSPHORUS (GAS)

P4[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
GAS	298.15	67.156	280.000	280.000	58.900	0.000	–24.582	58.900	24.398	–4.274
	300.00	67.309	280.416	280.001	59.024	0.124	–25.100	58.848	24.184	–4.211
	400.00	73.278	300.692	282.725	66.087	7.187	–54.190	52.905	13.808	–1.803
	500.00	76.486	317.422	288.042	73.590	14.690	–85.121	49.877	4.391	–0.459
	600.00	78.378	331.548	294.147	81.341	22.441	–117.588	47.098	–4.442	0.387
	700.00	79.578	343.727	300.380	89.243	30.343	–151.366	44.470	–12.823	0.957
	800.00	80.384	354.409	306.479	97.243	38.343	–186.283	41.940	–20.834	1.360
	900.00	80.949	363.911	312.342	105.312	46.412	–222.208	39.478	–28.532	1.656
	1000.00	81.360	372.462	317.934	113.428	54.528	–259.034	37.064	–35.959	1.878
	1100.00	81.667	380.232	323.250	121.580	62.680	–296.675	34.685	–43.146	2.049
	1200.00	81.902	387.348	328.299	129.759	70.859	–335.059	–221.951	–45.760	1.992
	1300.00	82.085	393.911	333.097	137.959	79.059	–374.126	–221.182	–31.109	1.250
	1400.00	82.230	400.000	337.661	146.175	87.275	–413.825	–220.417	–16.516	0.616
	1500.00	82.347	405.677	342.008	154.404	95.504	–454.112	–219.655	–1.979	0.069
	1600.00	82.442	410.995	346.155	162.644	103.744	–494.949	–218.897	12.508	–0.408
	1700.00	82.519	415.996	350.118	170.892	111.992	–536.301	–218.143	26.948	–0.828
	1800.00	82.584	420.714	353.910	179.147	120.247	–578.138	–217.394	41.343	–1.200
	1900.00	82.637	425.181	357.545	187.408	128.508	–620.435	–216.649	55.697	–1.531
	2000.00	82.682	429.421	361.033	195.674	136.774	–663.167	–215.908	70.012	–1.829

References

Phase	H / S	C _p
GAS	Ja2	Ja1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]					[————— kJ / mol —————]			[- -]
GAS	298.15	75.957	348.243	348.243	-145.896	0.000	-249.725	-145.896	-169.408	29.680
	300.00	76.043	348.713	348.245	-145.755	0.141	-250.369	-146.009	-169.553	29.522
	400.00	79.044	371.062	351.271	-137.980	7.916	-286.405	-193.208	-167.680	21.897
	500.00	80.442	388.868	357.071	-129.998	15.898	-324.432	-193.397	-161.274	16.848
	600.00	81.210	403.608	363.634	-121.912	23.984	-364.077	-193.521	-154.837	13.480
	700.00	81.680	416.165	370.264	-113.765	32.131	-405.081	-193.611	-148.383	11.072
	800.00	81.991	427.093	376.699	-105.581	40.315	-447.255	-193.680	-141.917	9.266
	900.00	82.210	436.764	382.846	-97.370	48.526	-490.457	-193.738	-135.443	7.861
	1000.00	82.372	445.434	388.679	-89.141	56.755	-534.575	-193.790	-128.963	6.736
	1100.00	82.496	453.291	394.201	-80.897	64.999	-579.517	-193.838	-122.477	5.816
	1200.00	82.594	460.473	399.429	-72.643	73.253	-625.211	-257.456	-114.899	5.001
	1300.00	82.675	467.088	404.382	-64.379	81.517	-671.593	-256.729	-103.048	4.141
	1400.00	82.743	473.217	409.083	-56.108	89.788	-718.612	-256.008	-91.254	3.405
	1500.00	82.801	478.928	413.551	-47.831	98.065	-766.222	-255.293	-79.511	2.769
	1600.00	82.851	484.273	417.806	-39.548	106.348	-814.385	-254.585	-67.815	2.214
	1700.00	82.896	489.298	421.865	-31.261	114.635	-863.066	-253.883	-56.163	1.726
	1800.00	82.937	494.037	425.744	-22.969	122.927	-912.235	-253.187	-44.553	1.293
	1900.00	82.974	498.522	429.458	-14.673	131.223	-961.865	-252.497	-32.981	0.907
	2000.00	83.008	502.779	433.018	-6.374	139.522	-1011.932	-251.814	-21.445	0.560

References

Phase	H / S	C _p
GAS	Ja1	Ja1

137.332

PHOSPHORUS TRICHLORIDE (GAS)

PCI3[g]

Phase	T [K]	C_p [—————]	S J / (K mol)	$-(G-H298)/T$ [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH_f [—————]	ΔG_f [—————]	log K_f [-]
GAS	298.15	71.579	311.692	311.692	-288.570	0.000	-381.501	-288.570	-269.473	47.210
	300.00	71.691	312.135	311.693	-288.437	0.133	-382.078	-288.576	-269.354	46.899
	400.00	76.048	333.427	314.567	-281.026	7.544	-414.397	-289.616	-262.717	34.307
	500.00	78.368	350.670	320.118	-273.294	15.276	-448.629	-289.874	-255.960	26.740
	600.00	79.729	365.089	326.445	-265.384	23.186	-484.437	-290.049	-249.160	21.691
	700.00	80.590	377.448	332.869	-257.365	31.205	-521.579	-290.177	-242.334	18.083
	800.00	81.167	388.250	339.131	-249.275	39.295	-559.875	-290.278	-235.492	15.376
	900.00	81.572	397.835	345.131	-241.137	47.433	-599.188	-290.361	-228.639	13.270
	1000.00	81.866	406.445	350.839	-232.964	55.606	-639.409	-290.433	-221.777	11.584
	1100.00	82.085	414.258	356.255	-224.766	63.804	-680.451	-290.498	-214.908	10.205
	1200.00	82.253	421.408	361.391	-216.549	72.021	-722.239	-354.130	-206.944	9.008
	1300.00	82.384	427.998	366.264	-208.317	80.253	-764.714	-353.416	-194.708	7.823
	1400.00	82.488	434.107	370.895	-200.073	88.497	-807.823	-352.706	-182.526	6.810
	1500.00	82.572	439.801	375.301	-191.820	96.750	-851.521	-352.003	-170.395	5.934
	1600.00	82.640	445.132	379.500	-183.559	105.011	-895.771	-351.307	-158.311	5.168
	1700.00	82.695	450.144	383.510	-175.292	113.278	-940.537	-350.618	-146.270	4.494

References

Phase	H / S	C_p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [(K mol) —————]	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	111.619	364.117	364.117	-374.886	0.000	-483.448	-374.886	-304.897	53.417
	300.00	111.868	364.809	364.120	-374.679	0.207	-484.122	-374.880	-304.463	53.012
	400.00	120.629	398.370	368.636	-362.992	11.894	-522.340	-375.113	-280.874	36.678
	500.00	124.728	425.777	377.410	-350.702	24.184	-563.591	-374.383	-257.394	26.890
	600.00	126.992	448.736	387.437	-338.106	36.780	-607.348	-373.507	-234.077	20.378
	700.00	128.391	468.425	397.634	-325.332	49.554	-653.230	-372.558	-210.913	15.739
	800.00	129.327	485.634	407.581	-312.443	62.443	-700.951	-371.565	-187.888	12.268
	900.00	129.995	500.907	417.118	-299.476	75.410	-750.292	-370.544	-164.990	9.576
	1000.00	130.496	514.631	426.195	-286.450	88.436	-801.081	-369.504	-142.206	7.428
	1100.00	130.888	527.087	434.809	-273.380	101.506	-853.176	-368.450	-119.527	5.676
	1200.00	131.206	538.490	442.981	-260.275	114.611	-906.463	-430.959	-95.855	4.172
	1300.00	131.472	549.003	450.737	-247.141	127.745	-960.845	-429.115	-68.005	2.732
	1400.00	131.700	558.755	458.109	-233.982	140.904	-1016.238	-427.271	-40.296	1.503
	1500.00	131.900	567.848	465.125	-220.801	154.085	-1072.574	-425.430	-12.719	0.443
	1600.00	132.079	576.367	471.814	-207.602	167.284	-1129.789	-423.591	14.735	-0.481
	1700.00	132.241	584.379	478.202	-194.386	180.500	-1187.830	-421.757	42.074	-1.293
	1800.00	132.390	591.942	484.313	-181.155	193.731	-1246.650	-419.927	69.305	-2.011
	1900.00	132.529	599.103	490.168	-167.909	206.977	-1306.205	-418.104	96.435	-2.651
	2000.00	132.659	605.904	495.786	-154.649	220.237	-1366.458	-416.288	123.469	-3.225

References

Phase	H / S	C _p
GAS	Nb1/Ja1	Ja1

87.969

PHOSPHORUS TRIFLUORIDE (GAS)

PF₃[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H ₂₉₈)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H ₂₉₈ [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
GAS	298.15	58.704	273.032	273.032	–958.429	0.000	–1039.833	–958.429	–936.893	164.140
	300.00	58.851	273.395	273.033	–958.320	0.109	–1040.339	–958.451	–936.760	163.104
	400.00	66.008	291.357	275.433	–952.059	6.370	–1068.602	–960.262	–929.177	121.338
	500.00	70.854	306.646	280.186	–945.199	13.230	–1098.522	–961.079	–921.305	96.248
	600.00	74.004	319.863	285.722	–937.945	20.484	–1129.862	–961.667	–913.292	79.509
	700.00	76.117	331.439	291.444	–930.432	27.997	–1162.440	–962.112	–905.192	67.546
	800.00	77.590	341.705	297.097	–922.743	35.686	–1196.107	–962.464	–897.036	58.570
	900.00	78.652	350.908	302.574	–914.928	43.501	–1230.745	–962.754	–888.839	51.587
	1000.00	79.442	359.238	307.830	–907.021	51.408	–1266.259	–963.000	–880.613	45.999
	1100.00	80.045	366.839	312.854	–899.046	59.383	–1302.569	–963.217	–872.364	41.425
	1200.00	80.514	373.825	317.648	–891.017	67.412	–1339.607	–1026.984	–863.006	37.566
	1300.00	80.887	380.285	322.221	–882.946	75.483	–1377.316	–1026.391	–849.365	34.128
	1400.00	81.189	386.291	326.585	–874.842	83.587	–1415.649	–1025.793	–835.770	31.183
	1500.00	81.435	391.901	330.755	–866.710	91.719	–1454.561	–1025.194	–822.218	28.632
	1600.00	81.640	397.163	334.743	–858.556	99.873	–1494.017	–1024.595	–808.706	26.402
	1700.00	81.811	402.118	338.562	–850.383	108.046	–1533.984	–1023.999	–795.231	24.434
	1800.00	81.956	406.798	342.224	–842.195	116.234	–1574.432	–1023.405	–781.791	22.687
	1900.00	82.080	411.233	345.740	–833.993	124.436	–1615.335	–1022.817	–768.384	21.124
	2000.00	82.187	415.446	349.121	–825.779	132.650	–1656.671	–1022.233	–755.008	19.719

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	84.870	300.814	300.814	–1594.397	0.000	–1684.085	–1594.397	–1520.681	266.417
	300.00	85.153	301.339	300.815	–1594.240	0.157	–1684.642	–1594.429	–1520.224	264.694
	400.00	99.081	327.838	304.333	–1584.995	9.402	–1716.130	–1596.469	–1495.087	195.238
	500.00	108.597	351.046	311.406	–1574.577	19.820	–1750.100	–1597.092	–1469.657	153.534
	600.00	114.807	371.433	319.747	–1563.385	31.012	–1786.245	–1597.215	–1444.151	125.725
	700.00	118.982	389.464	328.444	–1551.683	42.714	–1824.308	–1597.021	–1418.653	105.861
	800.00	121.899	405.554	337.096	–1539.631	54.766	–1864.074	–1596.616	–1393.197	90.966
	900.00	124.007	420.039	345.520	–1527.330	67.067	–1905.365	–1596.068	–1367.801	79.385
	1000.00	125.579	433.190	353.640	–1514.847	79.550	–1948.037	–1595.418	–1342.472	70.124
	1100.00	126.780	445.218	361.426	–1502.226	92.171	–1991.966	–1594.696	–1317.212	62.549
	1200.00	127.719	456.291	368.876	–1489.500	104.897	–2037.049	–1657.494	–1290.931	56.193
	1300.00	128.468	466.545	376.000	–1476.689	117.708	–2083.197	–1655.907	–1260.448	50.645
	1400.00	129.074	476.088	382.812	–1463.811	130.586	–2130.334	–1654.299	–1230.088	45.895
	1500.00	129.573	485.011	389.331	–1450.878	143.519	–2178.394	–1652.675	–1199.844	41.782
	1600.00	129.988	493.387	395.576	–1437.899	156.498	–2227.318	–1651.041	–1169.709	38.187
	1700.00	130.338	501.278	401.564	–1424.882	169.515	–2277.055	–1649.402	–1139.676	35.018
	1800.00	130.636	508.737	407.312	–1411.833	182.564	–2327.559	–1647.761	–1109.739	32.204
	1900.00	130.893	515.807	412.838	–1398.756	195.641	–2378.789	–1646.120	–1079.894	29.688
	2000.00	131.115	522.527	418.156	–1385.656	208.741	–2430.709	–1644.482	–1050.135	27.427

References

Phase	H / S	C _p
GAS	Ja1	Ja1

33.998

PHOSPHINE (GAS)

PH3[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	37.111	210.314	210.314	5.565	0.000	–57.140	5.565	13.548	–2.374
	300.00	37.183	210.543	210.314	5.634	0.069	–57.529	5.510	13.598	–2.368
	400.00	41.746	221.845	211.824	9.573	4.008	–79.165	1.839	16.925	–2.210
	500.00	46.515	231.677	214.831	13.988	8.423	–101.850	–0.763	21.008	–2.195
	600.00	50.953	240.556	218.389	18.865	13.300	–125.469	–2.912	25.571	–2.226
	700.00	54.946	248.716	222.147	24.164	18.599	–149.938	–4.653	30.461	–2.273
	800.00	58.481	256.289	225.947	29.839	24.274	–175.192	–6.040	35.576	–2.323
	900.00	61.578	263.360	229.715	35.845	30.280	–201.179	–7.128	40.846	–2.371
	1000.00	64.266	269.990	233.415	42.141	36.576	–227.850	–7.970	46.224	–2.414
	1100.00	66.579	276.227	237.026	48.686	43.121	–255.164	–8.616	51.676	–2.454
	1200.00	68.556	282.107	240.540	55.445	49.880	–283.083	–72.678	58.269	–2.536
	1300.00	70.234	287.663	243.953	62.387	56.822	–311.574	–72.275	69.165	–2.779
	1400.00	71.652	292.921	247.265	69.484	63.919	–340.606	–71.787	80.028	–2.986
	1500.00	72.849	297.906	250.476	76.710	71.145	–370.149	–71.240	90.853	–3.164
	1600.00	73.864	302.641	253.590	84.047	78.482	–400.179	–70.650	101.640	–3.318
	1700.00	74.736	307.146	256.609	91.478	85.913	–430.670	–70.032	112.389	–3.453
	1800.00	75.506	311.440	259.537	98.991	93.426	–461.601	–69.397	123.102	–3.572
	1900.00	76.211	315.541	262.377	106.577	101.012	–492.951	–68.749	133.778	–3.678
	2000.00	76.892	319.468	265.134	114.232	108.667	–524.703	–68.090	144.421	–3.772

References

Phase	H / S	C _p
GAS	Ja1	Ja1

411.687

PHOSPHORUS TRIIODIDE (GAS)

PI3[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	78.367	374.368	374.368	–17.991	0.000	–129.609	–17.991	–65.422	11.462
	300.00	78.420	374.853	374.370	–17.846	0.145	–130.302	–18.041	–65.716	11.442
	400.00	80.291	397.708	377.473	–9.897	8.094	–168.980	–45.802	–80.152	10.467
	500.00	81.157	415.728	383.386	–1.820	16.171	–209.684	–112.648	–82.270	8.595
	600.00	81.628	430.570	390.049	6.322	24.313	–252.021	–112.766	–76.183	6.632

References

Phase	H / S	C _p	Remarks
GAS	Tk1	Nb1,e	Tk1 MPT= 334.15

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	29.697	211.188	211.188	109.746	0.000	46.780	109.746	87.589	-15.345
	300.00	29.704	211.372	211.189	109.801	0.055	46.389	109.730	87.452	-15.227
	400.00	30.748	220.040	212.363	112.817	3.071	24.801	108.036	80.351	-10.493
	500.00	31.981	227.037	214.620	115.954	6.208	2.436	107.071	73.543	-7.683
	600.00	33.008	232.962	217.196	119.206	9.460	-20.571	106.198	66.921	-5.826
	700.00	33.832	238.114	219.824	122.549	12.803	-44.131	105.388	60.440	-4.510
	800.00	34.493	242.677	222.401	125.967	16.221	-68.175	104.618	54.072	-3.531
	900.00	35.026	246.771	224.885	129.444	19.698	-92.650	103.874	47.798	-2.774
	1000.00	35.458	250.485	227.262	132.969	23.223	-117.516	103.146	41.607	-2.173
	1100.00	35.808	253.881	229.530	136.533	26.787	-142.737	102.429	35.488	-1.685
	1200.00	36.092	257.010	231.691	140.128	30.382	-168.283	38.146	30.523	-1.329
	1300.00	36.322	259.908	233.752	143.749	34.003	-194.131	38.213	29.885	-1.201
	1400.00	36.510	262.607	235.717	147.391	37.645	-220.258	38.275	29.242	-1.091
	1500.00	36.663	265.131	237.595	151.050	41.304	-246.647	38.333	28.594	-0.996
	1600.00	36.791	267.501	239.391	154.723	44.977	-273.279	38.386	27.943	-0.912
	1700.00	36.903	269.735	241.111	158.408	48.662	-300.142	38.434	27.289	-0.838
	1800.00	37.005	271.848	242.760	162.103	52.357	-327.223	38.479	26.632	-0.773
	1900.00	37.104	273.851	244.344	165.809	56.063	-354.508	38.520	25.973	-0.714
	2000.00	37.209	275.757	245.868	169.524	59.778	-381.989	38.560	25.312	-0.661

References

Phase	H / S	C _p
GAS	Nb1	Ja1

46.973

PHOSPHORUS MONOXIDE (GAS)

PO[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [— —]
GAS	298.15	31.770	222.774	222.774	-23.556	0.000	-89.976	-23.556	-47.149	8.260
	300.00	31.762	222.970	222.774	-23.497	0.059	-90.388	-23.569	-47.295	8.235
	400.00	32.290	232.150	224.022	-20.305	3.251	-113.165	-25.113	-54.904	7.170
	500.00	33.228	239.457	226.402	-17.028	6.528	-136.757	-25.999	-62.248	6.503
	600.00	34.035	245.589	229.103	-13.664	9.892	-161.018	-26.847	-69.418	6.043
	700.00	34.680	250.886	231.845	-10.227	13.329	-185.847	-27.670	-76.448	5.705
	800.00	35.195	255.552	234.522	-6.732	16.824	-211.174	-28.476	-83.361	5.443
	900.00	35.612	259.722	237.095	-3.191	20.365	-236.941	-29.270	-90.174	5.234
	1000.00	35.952	263.493	239.549	0.388	23.944	-263.105	-30.055	-96.899	5.061
	1100.00	36.231	266.933	241.884	3.997	27.553	-289.629	-30.833	-103.545	4.917
	1200.00	36.463	270.095	244.105	7.632	31.188	-316.482	-30.833	-109.032	4.746
	1300.00	36.655	273.022	246.218	11.288	34.844	-343.640	-30.833	-110.187	4.427
	1400.00	36.815	275.744	248.231	14.962	38.518	-371.080	-30.833	-111.343	4.154
	1500.00	36.949	278.289	250.151	18.651	42.207	-398.783	-30.833	-112.498	3.918
	1600.00	37.061	280.677	251.985	22.351	45.907	-426.732	-30.833	-113.654	3.710
	1700.00	37.156	282.927	253.740	26.062	49.618	-454.914	-30.833	-114.809	3.528
	1800.00	37.237	285.053	255.421	29.782	53.338	-483.314	-30.833	-115.964	3.365
	1900.00	37.307	287.068	257.034	33.509	57.065	-511.921	-30.833	-117.117	3.220
	2000.00	37.370	288.984	258.584	37.243	60.799	-540.724	-30.833	-118.269	3.089
	2100.00	37.429	290.808	260.075	40.983	64.539	-569.714	-30.833	-119.420	2.970
	2200.00	37.486	292.551	261.512	44.729	68.285	-598.883	-30.833	-120.569	2.863
	2300.00	37.545	294.219	262.898	48.481	72.037	-628.222	-30.833	-121.715	2.764
	2400.00	37.607	295.818	264.237	52.238	75.794	-657.724	-30.833	-122.859	2.674
	2500.00	37.675	297.354	265.531	56.002	79.558	-687.384	-30.833	-124.001	2.591

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	41.433	253.660	253.660	-314.511	0.000	-390.140	-314.511	-316.730	55.490
	300.00	41.497	253.916	253.661	-314.434	0.077	-390.609	-314.533	-316.744	55.150
	400.00	45.548	266.405	255.336	-310.083	4.428	-416.645	-316.404	-317.123	41.412
	500.00	48.819	276.942	258.630	-305.355	9.156	-443.826	-317.368	-317.186	33.136
	600.00	51.071	286.054	262.459	-300.354	14.157	-471.986	-318.158	-317.074	27.604
	700.00	52.628	294.051	266.413	-295.164	19.347	-501.000	-318.856	-316.837	23.643
	800.00	53.737	301.155	270.320	-289.843	24.668	-530.767	-319.504	-316.503	20.666
	900.00	54.549	307.534	274.106	-284.427	30.084	-561.207	-320.126	-316.091	18.345
	1000.00	55.162	313.314	277.743	-278.940	35.571	-592.254	-320.734	-315.610	16.486
	1100.00	55.637	318.595	281.220	-273.399	41.112	-623.853	-321.334	-315.068	14.961
	1200.00	56.011	323.452	284.540	-267.816	46.695	-655.959	-385.504	-313.383	13.641
	1300.00	56.313	327.948	287.708	-262.199	52.312	-688.531	-385.328	-307.380	12.351
	1400.00	56.561	332.131	290.733	-256.555	57.956	-721.538	-385.160	-301.390	11.245
	1500.00	56.767	336.040	293.625	-250.888	63.623	-754.948	-385.001	-295.412	10.287
	1600.00	56.941	339.710	296.392	-245.202	69.309	-788.738	-384.853	-289.445	9.449
	1700.00	57.090	343.166	299.042	-239.501	75.010	-822.883	-384.717	-283.486	8.710
	1800.00	57.219	346.433	301.585	-233.785	80.726	-857.365	-384.594	-277.535	8.054
	1900.00	57.332	349.530	304.028	-228.057	86.454	-892.164	-384.484	-271.590	7.467
	2000.00	57.431	352.473	306.377	-222.319	92.192	-927.266	-384.390	-265.651	6.938

References

Phase	H / S	C _p
GAS	Ja1	Ja1

141.945

DIPHOSPHORUS PENTAOXIDE (LIQID)

P2O5

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
LIQ	298.15	156.900	117.243	117.243	-1498.120	0.000	-1533.076	-1498.120	-1355.675	237.509
	300.00	156.900	118.214	117.246	-1497.830	0.290	-1533.294	-1498.054	-1354.791	235.890
	400.00	156.900	163.351	123.400	-1482.140	15.980	-1547.480	-1496.294	-1307.174	170.699
	500.00	156.900	198.362	135.022	-1466.450	31.670	-1565.631	-1493.517	-1260.220	131.654
	600.00	156.900	226.969	148.035	-1450.760	47.360	-1586.941	-1490.991	-1213.802	105.671
	700.00	156.900	251.155	161.083	-1435.070	63.050	-1610.878	-1488.703	-1167.788	87.141
	800.00	156.900	272.106	173.681	-1419.380	78.740	-1637.064	-1486.620	-1122.087	73.265
	900.00	156.900	290.586	185.663	-1403.690	94.430	-1665.217	-1484.709	-1076.637	62.486
	1000.00	156.900	307.117	196.997	-1388.000	110.120	-1695.117	-1482.939	-1031.392	53.874
	1100.00	156.900	322.071	207.698	-1372.310	125.810	-1726.588	-1481.287	-986.318	46.836
	1200.00	156.900	335.723	217.806	-1356.620	141.500	-1759.488	-1606.877	-939.211	40.883
	1300.00	156.900	348.282	227.366	-1340.930	157.190	-1793.696	-1603.860	-883.695	35.507
	1400.00	156.900	359.910	236.424	-1325.240	172.880	-1829.113	-1600.929	-828.408	30.908
	1500.00	156.900	370.735	245.021	-1309.550	188.570	-1865.652	-1598.075	-773.328	26.930
	1600.00	156.900	380.861	253.198	-1293.860	204.260	-1903.237	-1595.294	-718.436	23.455

References

Phase	H / S	C _p	Remarks
LIQ	e,Ja2,Tk1	e	metastable, SOL-LIQ transitions see Gmelin and Tk1

P4O6[g]

TETRAPHOSPHORUS HEXAOXIDE (GAS)

219.891

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	143.981	345.708	345.708	-2214.089	0.000	-2317.162	-2214.089	-2084.688	365.229
	300.00	144.581	346.600	345.711	-2213.822	0.267	-2317.802	-2214.162	-2083.885	362.837
	400.00	172.065	392.215	351.742	-2197.900	16.189	-2354.786	-2220.159	-2039.219	266.295
	500.00	189.695	432.656	363.966	-2179.744	34.345	-2396.072	-2221.710	-1993.774	208.288
	600.00	200.931	468.308	378.447	-2160.172	53.917	-2441.157	-2222.147	-1948.132	169.600
	700.00	208.390	499.879	393.584	-2139.682	74.407	-2489.598	-2221.951	-1902.472	141.964
	800.00	213.556	528.063	408.664	-2118.570	95.519	-2541.020	-2221.380	-1856.868	121.241
	900.00	217.267	553.441	423.364	-2097.019	117.070	-2595.117	-2220.576	-1811.350	105.128
	1000.00	220.017	576.482	437.542	-2075.149	138.940	-2651.631	-2219.622	-1765.930	92.243
	1100.00	222.110	597.554	451.144	-2053.038	161.051	-2710.348	-2218.569	-1720.612	81.705
	1200.00	223.738	616.953	464.164	-2030.742	183.347	-2771.086	-2471.735	-1671.034	72.738
	1300.00	225.029	634.915	476.616	-2008.301	205.788	-2833.690	-2467.474	-1604.482	64.469
	1400.00	226.070	651.630	488.527	-1985.745	228.344	-2898.027	-2463.208	-1538.258	57.393
	1500.00	226.922	667.258	499.927	-1963.094	250.995	-2963.980	-2458.948	-1472.339	51.271
	1600.00	227.627	681.926	510.849	-1940.365	273.724	-3031.447	-2454.702	-1406.704	45.924
	1700.00	228.218	695.744	521.322	-1917.572	296.517	-3100.337	-2450.479	-1341.333	41.214
	1800.00	228.718	708.803	531.379	-1894.725	319.364	-3170.570	-2446.286	-1276.210	37.035
	1900.00	229.145	721.181	541.045	-1871.831	342.258	-3242.075	-2442.126	-1211.320	33.302
	2000.00	229.513	732.944	550.349	-1848.898	365.191	-3314.786	-2438.006	-1146.647	29.947

References

Phase	H / S	C _p
GAS	Ja1	Ja1

P4O10

TETRAPHOSPHORUS DECAOXIDE

283.889

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	211.710	228.781	228.781	-3009.936	0.000	-3078.147	-3009.936	-2723.344	477.119
	300.00	212.673	230.094	228.785	-3009.543	0.393	-3078.572	-3009.992	-2721.566	473.867
	400.00	260.245	298.027	237.725	-2985.815	24.121	-3105.026	-3014.125	-2624.413	342.713
	500.00	299.993	360.465	256.114	-2957.760	52.176	-3137.993	-3011.895	-2527.171	264.012
	600.00	335.975	418.387	278.388	-2925.937	83.999	-3176.969	-3006.399	-2430.691	211.610
	632.00	346.796	436.124	285.927	-2915.011	94.925	-3190.642	-3004.002	-2400.048	198.363

References

Phase	H / S	C _p	Remarks
SOL	Ja2	Ja2	Ja1 SPT= 632., L= 106.0

283.889

TETRAPHOSPHORUSDECAOXIDE (GAS)

P4O10[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
GAS	298.15	188.804	403.964	403.964	-2904.081	0.000	-3024.523	-2904.081	-2669.720	467.724
	300.00	189.638	405.134	403.968	-2903.731	0.350	-3025.271	-2904.179	-2668.265	464.586
	400.00	227.511	465.202	411.900	-2882.760	21.321	-3068.841	-2911.070	-2588.228	337.988
	500.00	253.807	518.973	428.040	-2858.614	45.467	-3118.101	-2912.749	-2507.279	261.934
	600.00	272.134	566.965	447.270	-2832.264	71.817	-3172.443	-2912.726	-2426.165	211.216
	700.00	285.128	609.946	467.494	-2804.365	99.716	-3231.327	-2911.631	-2345.146	174.997
	800.00	294.544	648.667	487.761	-2775.357	128.724	-3294.290	-2909.838	-2264.336	147.846
	900.00	301.519	683.781	507.621	-2745.537	158.544	-3360.940	-2907.576	-2183.780	126.743
	1000.00	306.800	715.835	526.864	-2715.109	188.972	-3430.945	-2904.988	-2103.494	109.875
	1100.00	310.878	745.276	545.399	-2684.217	219.864	-3504.020	-2902.172	-2023.480	96.087
	1200.00	314.081	772.468	563.203	-2652.963	251.118	-3579.925	-3153.477	-1939.371	84.419
	1300.00	316.638	797.713	580.283	-2621.422	282.659	-3658.449	-3147.283	-1838.447	73.870
	1400.00	318.708	821.257	596.664	-2589.651	314.430	-3739.411	-3141.030	-1738.001	64.846
	1500.00	320.406	843.305	612.380	-2557.693	346.388	-3822.651	-3134.744	-1638.004	57.040
	1600.00	321.815	864.030	627.467	-2525.580	378.501	-3908.028	-3128.448	-1538.427	50.224
	1700.00	322.995	883.576	641.963	-2493.338	410.743	-3995.417	-3122.160	-1439.243	44.223
	1800.00	323.993	902.067	655.904	-2460.987	443.094	-4084.708	-3115.895	-1340.429	38.898
	1900.00	324.845	919.608	669.325	-2428.544	475.537	-4175.799	-3109.665	-1241.962	34.144
	2000.00	325.577	936.289	682.260	-2396.022	508.059	-4268.601	-3103.482	-1143.822	29.874
	2100.00	326.210	952.190	694.738	-2363.432	540.649	-4363.031	-3097.353	-1045.990	26.018
	2200.00	326.762	967.378	706.788	-2330.782	573.299	-4459.015	-3091.287	-948.449	22.519
	2300.00	327.246	981.915	718.436	-2298.081	606.000	-4556.485	-3085.289	-851.181	19.331
	2400.00	327.672	995.851	729.707	-2265.335	638.746	-4655.378	-3079.364	-754.173	16.414
	2500.00	328.050	1009.235	740.622	-2232.549	671.532	-4755.637	-3073.515	-657.411	13.736

References

Phase	H / S	C _p
GAS	Ja2	Ja2

POBr3[g]

PHOSPHORUS TRIBROMIDE OXIDE (GAS)

286.685

Phase	T [K]	C _p [————— J / (K mol) —————]	S —(G–H298)/T	—(G–H298)/T	H [————— kJ / mol —————]	H–H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	89.892	359.841	359.841	–406.559	0.000	–513.846	–406.559	–402.946	70.595
	300.00	89.996	360.398	359.843	–406.393	0.166	–514.512	–406.674	–402.924	70.155
	400.00	95.126	387.025	363.439	–397.124	9.435	–551.934	–453.866	–391.949	51.183
	500.00	98.641	408.657	370.386	–387.424	19.135	–591.752	–453.865	–376.464	39.329
	600.00	100.945	426.860	378.322	–377.436	29.123	–633.552	–453.668	–361.000	31.428
	700.00	102.503	442.545	386.402	–367.259	39.300	–677.041	–453.354	–345.579	25.787
	800.00	103.600	456.308	394.298	–356.951	49.608	–721.997	–452.968	–330.208	21.560
	900.00	104.401	468.559	401.881	–346.549	60.010	–768.252	–452.537	–314.889	18.276
	1000.00	105.006	479.591	409.109	–336.077	70.482	–815.668	–452.078	–299.619	15.650
	1100.00	105.474	489.622	415.980	–325.552	81.007	–864.137	–451.599	–284.396	13.505
	1200.00	105.847	498.816	422.505	–314.986	91.573	–913.565	–514.680	–268.128	11.671
	1300.00	106.150	507.301	428.706	–304.385	102.174	–963.876	–513.408	–247.633	9.950
	1400.00	106.401	515.177	434.604	–293.757	112.802	–1015.005	–512.136	–227.237	8.478
	1500.00	106.612	522.525	440.223	–283.106	123.453	–1066.894	–510.868	–206.931	7.206
	1600.00	106.793	529.412	445.585	–272.436	134.123	–1119.495	–509.606	–186.710	6.095
	1700.00	106.950	535.891	450.708	–261.749	144.810	–1172.763	–508.349	–166.567	5.118
	1800.00	107.087	542.008	455.612	–251.047	155.512	–1226.661	–507.101	–146.498	4.251
	1900.00	107.210	547.801	460.313	–240.332	166.227	–1281.154	–505.862	–126.499	3.478
	2000.00	107.320	553.303	464.826	–229.605	176.954	–1336.211	–504.633	–106.564	2.783

References

Phase	H / S	C _p
GAS	Ja1	Ja1

POCl3

PHOSPHORUS TRICHLORIDE OXIDE

153.331

Phase	T [K]	C _p [————— J / (K mol) —————]	S —(G-H298)/T	—(G-H298)/T	H [————— kJ / mol —————]	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
LIQ	298.15	138.783	222.459	222.459	-597.099	0.000	-663.425	-597.099	-520.815	91.245
	300.00	138.783	223.318	222.462	-596.842	0.257	-663.838	-597.008	-520.341	90.600
	383.00	138.783	257.216	226.470	-585.323	11.776	-683.837	-593.826	-499.490	68.122

References

Phase	H / S	C _p	Remarks
LIQ	Nb1	Tk1	Tk1 BPT= 383., L= 34.48 kJ

153.331

PHOSPHORUS TRICHLORIDE OXIDE (GAS)

POCl3[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
GAS	298.15	84.952	325.499	325.499	–559.694	0.000	–656.742	–559.694	–514.131	90.074
	300.00	85.092	326.025	325.501	–559.537	0.157	–657.344	–559.702	–513.848	89.469
	400.00	91.811	351.477	328.925	–550.673	9.021	–691.264	–560.777	–498.323	65.074
	500.00	96.303	372.483	335.597	–541.251	18.443	–727.493	–560.873	–482.692	50.427
	600.00	99.219	390.317	343.269	–531.465	28.229	–765.655	–560.752	–467.065	40.662
	700.00	101.181	405.769	351.119	–521.439	38.255	–805.477	–560.501	–451.469	33.689
	800.00	102.557	419.375	358.817	–511.248	48.446	–846.748	–560.169	–435.915	28.462
	900.00	103.558	431.515	366.232	–500.940	58.754	–889.303	–559.785	–420.406	24.400
	1000.00	104.310	442.466	373.317	–490.545	69.149	–933.011	–559.365	–404.941	21.152
	1100.00	104.892	452.437	380.063	–480.083	79.611	–977.764	–558.921	–389.520	18.497
	1200.00	105.352	461.584	386.481	–469.570	90.124	–1023.471	–622.032	–373.051	16.238
	1300.00	105.725	470.032	392.587	–459.016	100.678	–1070.057	–620.787	–352.353	14.158
	1400.00	106.033	477.879	398.403	–448.427	111.267	–1117.458	–619.539	–331.751	12.378
	1500.00	106.291	485.203	403.948	–437.811	121.883	–1165.616	–618.293	–311.238	10.838
	1600.00	106.510	492.070	409.243	–427.171	132.523	–1214.483	–617.051	–290.809	9.494
	1700.00	106.700	498.533	414.307	–416.510	143.184	–1264.016	–615.814	–270.456	8.310
	1800.00	106.866	504.637	419.158	–405.831	153.863	–1314.178	–614.586	–250.177	7.260
	1900.00	107.012	510.419	423.810	–395.137	164.557	–1364.933	–613.367	–229.965	6.322
	2000.00	107.144	515.911	428.279	–384.429	175.265	–1416.252	–612.159	–209.817	5.480

References

Phase	H / S	C _p
GAS	Ja1	Ja1

PS[g]

PHOSPHORUS MONOSULFIDE (GAS)

63.040

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [————— kJ / mol —————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
GAS	298.15	35.152	234.300	234.300	152.298	0.000	82.441	152.298	104.244	–18.263
	300.00	35.177	234.518	234.301	152.363	0.065	82.008	152.277	103.946	–18.099
	400.00	36.101	244.783	235.694	155.933	3.635	58.020	148.014	88.297	–11.530
	500.00	36.556	252.892	238.351	159.568	7.270	33.122	145.115	73.681	–7.697
	600.00	36.825	259.583	241.349	163.238	10.940	7.489	142.576	59.642	–5.192
	700.00	37.007	265.274	244.370	166.930	14.632	–18.761	140.326	45.999	–3.432
	800.00	37.142	270.224	247.299	170.638	18.340	–45.541	138.041	32.677	–2.134
	900.00	37.251	274.606	250.095	174.358	22.060	–72.787	82.922	20.800	–1.207
	1000.00	37.342	278.535	252.745	178.088	25.790	–100.447	82.184	13.937	–0.728
	1100.00	37.423	282.098	255.254	181.826	29.528	–128.482	81.448	7.148	–0.339
	1200.00	37.496	285.358	257.629	185.572	33.274	–156.857	17.141	1.516	–0.066
	1300.00	37.564	288.362	259.879	189.325	37.027	–185.545	17.183	0.212	–0.009
	1400.00	37.628	291.148	262.014	193.085	40.787	–214.522	17.220	–1.095	0.041
	1500.00	37.689	293.746	264.044	196.851	44.553	–243.768	17.256	–2.405	0.084
	1600.00	37.748	296.180	265.977	200.622	48.324	–273.266	17.289	–3.716	0.121
	1700.00	37.805	298.470	267.822	204.400	52.102	–302.999	17.320	–5.030	0.155
	1800.00	37.862	300.633	269.585	208.183	55.885	–332.956	17.351	–6.346	0.184
	1900.00	37.917	302.681	271.274	211.972	59.674	–363.122	17.380	–7.663	0.211
	2000.00	37.971	304.628	272.893	215.767	63.469	–393.488	17.408	–8.982	0.235

References

Phase	H / S	C _p
GAS	Pa3	Mi1

P4S3

TETRAPHOSPHORUS TRISULFIDE

220.093

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [————— kJ / mol —————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
SOL–A	298.15	162.619	203.342	203.342	–224.179	0.000	–284.806	–224.179	–207.153	36.292
	300.00	163.514	204.351	203.346	–223.877	0.302	–285.183	–224.180	–207.047	36.050
	313.90	170.245	211.908	203.557	–221.558	2.621	–288.076	–224.150	–206.254	34.322
SOL–B			32.842		10.309					
	313.90	180.745	244.750	203.557	–211.249	12.930	–288.076	–213.841	–206.254	34.322
	400.00	185.644	289.130	217.372	–195.476	28.703	–311.128	–222.528	–203.298	26.548
	446.00	188.262	309.479	225.839	–186.876	37.303	–324.903	–223.754	–201.043	23.546
LIQ			45.217		20.167					
	446.00	230.120	354.696	225.839	–166.709	57.470	–324.903	–203.587	–201.043	23.546
	500.00	230.120	380.996	241.203	–154.282	69.897	–344.780	–203.572	–200.726	20.970
	600.00	230.120	422.952	268.104	–131.270	92.909	–385.042	–201.818	–200.296	17.437
	677.55	230.120	450.924	287.461	–113.425	110.754	–418.948	–199.850	–200.219	15.436

References

Phase	H / S	C _p	Remarks
SOL–A	Mi1	Mi1	
SOL–B	Mi1	Mi1	
LIQ	Mi1	e	Mi1 NBPT= 677.551 GAS(P4S2 + P4S3 + ...)

284.225	TETRAPHOSPHORUS PENTASULFIDE									P4S5
Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	211.111	252.714	252.714	-304.930	0.000	-380.277	-304.930	-283.509	49.670
	300.00	211.334	254.020	252.718	-304.539	0.391	-380.745	-304.926	-283.376	49.340
	400.00	223.384	316.467	261.151	-282.803	22.127	-409.390	-319.102	-275.005	35.912

References

Phase	H / S	C _p
SOL	Mi1	e

316.291	TETRAPHOSPHORUS HEXASULFIDE									P4S6
Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	223.443	281.583	281.583	-312.461	0.000	-396.415	-312.461	-290.090	50.823
	300.00	223.844	282.967	281.587	-312.047	0.414	-396.937	-312.477	-289.951	50.485
	400.00	245.517	350.331	290.626	-288.579	23.882	-428.711	-329.502	-281.049	36.701
	500.00	267.190	407.445	308.410	-262.944	49.517	-466.666	-337.810	-268.068	28.005
	503.00	267.840	409.045	309.006	-262.141	50.320	-467.891	-338.019	-267.649	27.794
LIQ			58.577		29.464					
	503.00	334.720	467.621	309.006	-232.677	79.784	-467.891	-308.555	-267.649	27.794
	600.00	334.720	526.646	339.560	-200.209	112.252	-516.197	-307.061	-259.852	22.622
	700.00	334.720	578.243	370.067	-166.737	145.724	-571.508	-303.977	-252.221	18.821

References

Phase	H / S	C _p
SOL	Mi1	Mi1
LIQ	Mi1	Mi1

P4S7

TETRAPHOSPHORUS HEPTASULFIDE

348.357

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	242.331	307.524	307.524	-323.340	0.000	-415.028	-323.340	-299.146	52.409
	300.00	242.672	309.024	307.529	-322.891	0.449	-415.599	-323.363	-298.996	52.060
	400.00	261.082	381.358	317.267	-297.704	25.636	-450.247	-343.249	-289.307	37.780
	500.00	279.491	441.594	336.264	-270.675	52.665	-491.472	-354.067	-274.693	28.697
	581.00	294.403	484.649	353.999	-247.432	75.908	-529.013	-359.866	-261.338	23.495
LIQ			63.012		36.610					
	581.00	368.192	547.661	353.999	-210.822	112.518	-529.013	-359.866	-261.338	23.495
	600.00	368.192	559.509	360.320	-203.827	119.513	-539.532	-322.780	-259.320	22.576
	700.00	368.192	616.266	392.934	-167.007	156.333	-598.394	-319.659	-248.983	18.579

References

Phase	H / S	C _p
SOL	Mi1	Mi1
LIQ	Mi1	Mi1

P4S10

TETRAPHOSPHORUS DECASULFIDE

444.555

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	295.951	381.748	381.748	-309.200	0.000	-423.018	-309.200	-278.463	48.786
	300.00	296.470	383.580	381.754	-308.652	0.548	-423.726	-309.250	-278.272	48.452
	400.00	324.528	472.712	393.718	-277.602	31.598	-466.687	-337.018	-265.915	34.725
	500.00	352.586	548.143	417.236	-243.746	65.454	-517.818	-352.715	-246.495	25.751
	560.00	369.420	589.037	433.476	-222.086	87.114	-551.947	-359.401	-233.331	21.764
LIQ			73.370		41.087					
	560.00	587.434	662.406	433.476	-180.999	128.201	-551.947	-318.314	-233.331	21.764
	600.00	587.434	702.935	450.105	-157.502	151.698	-579.263	-312.760	-227.451	19.801
	700.00	587.434	793.488	492.858	-98.759	210.441	-654.200	-297.643	-214.418	16.000
	800.00	587.434	871.929	535.448	-40.015	269.185	-737.558	-283.029	-203.544	13.290

References

Phase	H / S	C _p
SOL	Pa3	Mi1
LIQ	Mi1	Mi1

231.036

PROTACTINIUM

Pa

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [————— kJ / mol —————]	H–H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [—]
SOL–A	298.15	27.619	51.882	51.882	0.000	0.000	–15.468	0.000	0.000	0.000
	300.00	27.642	52.053	51.882	0.051	0.051	–15.565	0.000	0.000	0.000
	400.00	28.880	60.174	52.981	2.877	2.877	–21.192	0.000	0.000	0.000
	500.00	30.121	66.752	55.097	5.827	5.827	–27.549	0.000	0.000	0.000
	600.00	31.364	72.353	57.518	8.901	8.901	–34.511	0.000	0.000	0.000
	700.00	32.608	77.282	59.996	12.100	12.100	–41.997	0.000	0.000	0.000
	800.00	33.851	81.717	62.438	15.423	15.423	–49.950	0.000	0.000	0.000
	900.00	35.095	85.776	64.809	18.870	18.870	–58.328	0.000	0.000	0.000
	1000.00	36.339	89.538	67.096	22.442	22.442	–67.096	0.000	0.000	0.000
	1100.00	37.583	93.060	69.298	26.138	26.138	–76.227	0.000	0.000	0.000
	1200.00	38.828	96.383	71.418	29.959	29.959	–85.701	0.000	0.000	0.000
	1300.00	40.072	99.540	73.460	33.904	33.904	–95.499	0.000	0.000	0.000
	1400.00	41.316	102.555	75.432	37.973	37.973	–105.604	0.000	0.000	0.000
	1443.00	41.851	103.813	76.259	39.761	39.761	–110.041	0.000	0.000	0.000
			4.602		6.640					
SOL–B	1443.00	39.748	108.415	76.259	46.401	46.401	–110.041	0.000	0.000	0.000
	1500.00	39.748	109.955	77.510	48.667	48.667	–116.265	0.000	0.000	0.000
	1600.00	39.748	112.520	79.619	52.642	52.642	–127.390	0.000	0.000	0.000
	1700.00	39.748	114.930	81.626	56.616	56.616	–138.764	0.000	0.000	0.000
	1800.00	39.748	117.202	83.540	60.591	60.591	–150.372	0.000	0.000	0.000
	1845.00	39.748	118.183	84.373	62.380	62.380	–155.668	0.000	0.000	0.000
			6.690		12.343					
LIQ	1845.00	47.279	124.873	84.373	74.723	74.723	–155.668	0.000	0.000	0.000
	1900.00	47.279	126.262	85.565	77.323	77.323	–162.574	0.000	0.000	0.000
	2000.00	47.279	128.687	87.661	82.051	82.051	–175.323	0.000	0.000	0.000
	2100.00	47.279	130.994	89.670	86.779	86.779	–188.308	0.000	0.000	0.000
	2200.00	47.279	133.193	91.599	91.507	91.507	–201.518	0.000	0.000	0.000
	2300.00	47.279	135.295	93.454	96.235	96.235	–214.943	0.000	0.000	0.000
	2400.00	47.279	137.307	95.239	100.963	100.963	–228.574	0.000	0.000	0.000
	2500.00	47.279	139.237	96.961	105.691	105.691	–242.402	0.000	0.000	0.000

References

Phase	H / S	C _p
SOL–A	Pa1	Pa1
SOL–B	Pa1	Pa1
LIQ	Pa1	Pa1

Pa[g]

PROTACTINIUM (GAS)

231.036

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	22.905	198.046	198.046	606.680	0.000	547.633	606.680	563.101	-98.653
	300.00	22.941	198.188	198.047	606.722	0.042	547.266	606.671	562.831	-97.998
	400.00	24.340	204.998	198.966	609.093	2.413	527.094	606.216	548.286	-71.599
	500.00	25.421	210.546	200.743	611.581	4.901	506.308	605.754	533.857	-55.772
	600.00	26.467	215.274	202.781	614.176	7.496	485.012	605.274	519.522	-45.228
	700.00	27.488	219.431	204.868	616.874	10.194	463.272	604.774	505.269	-37.704
	800.00	28.468	223.166	206.926	619.672	12.992	441.139	604.249	491.090	-32.065
	900.00	29.393	226.573	208.922	622.566	15.886	418.650	603.695	476.978	-27.683
	1000.00	30.255	229.715	210.846	625.549	18.869	395.834	603.107	462.929	-24.181
	1100.00	31.053	232.636	212.696	628.615	21.935	372.714	602.476	448.942	-21.318
	1200.00	31.786	235.370	214.473	631.757	25.077	349.313	601.798	435.014	-18.936
	1300.00	32.456	237.941	216.180	634.970	28.290	325.646	601.066	421.144	-16.922
	1400.00	33.067	240.369	217.822	638.246	31.566	301.729	600.273	407.334	-15.198
	1500.00	33.623	242.670	219.403	641.581	34.901	277.576	592.914	393.841	-13.715
	1600.00	34.130	244.856	220.926	644.969	38.289	253.199	592.328	380.589	-12.425
	1700.00	34.591	246.940	222.395	648.406	41.726	228.608	591.789	367.372	-11.288
	1800.00	35.014	248.929	223.814	651.886	45.206	203.814	591.295	354.186	-10.278
	1900.00	35.403	250.833	225.187	655.407	48.727	178.825	578.084	341.400	-9.386
	2000.00	35.765	252.658	226.515	658.966	52.286	153.650	576.915	328.973	-8.592
	2100.00	36.105	254.411	227.802	662.560	55.880	128.296	575.780	316.604	-7.875
	2200.00	36.430	256.098	229.050	666.186	59.506	102.770	574.679	304.288	-7.225
	2300.00	36.746	257.725	230.261	669.845	63.165	77.079	573.610	292.022	-6.632
	2400.00	37.060	259.295	231.439	673.536	66.856	51.227	572.573	279.801	-6.090
	2500.00	37.377	260.814	232.583	677.257	70.577	25.221	571.567	267.623	-5.592

References

Phase	H / S	C _p
GAS	Pa1	Pa1

207.200

LEAD

Pb

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	26.835	64.785	64.785	0.000	0.000	-19.316	0.000	0.000	0.000
	300.00	26.854	64.951	64.786	0.050	0.050	-19.436	0.000	0.000	0.000
	400.00	27.723	72.801	65.850	2.780	2.780	-26.340	0.000	0.000	0.000
	500.00	28.539	79.074	67.888	5.593	5.593	-33.944	0.000	0.000	0.000
	600.00	29.405	84.353	70.203	8.490	8.490	-42.122	0.000	0.000	0.000
	600.60	29.410	84.383	70.217	8.508	8.508	-42.173	0.000	0.000	0.000
			7.942		4.770					
LIQ	600.60	30.671	92.325	70.217	13.278	13.278	-42.173	0.000	0.000	0.000
	700.00	30.335	96.997	73.697	16.309	16.309	-51.588	0.000	0.000	0.000
	800.00	30.013	101.026	76.868	19.327	19.327	-61.494	0.000	0.000	0.000
	900.00	29.701	104.543	79.752	22.312	22.312	-71.776	0.000	0.000	0.000
	1000.00	29.396	107.657	82.389	25.267	25.267	-82.389	0.000	0.000	0.000
	1100.00	29.064	110.443	84.815	28.191	28.191	-93.297	0.000	0.000	0.000
	1200.00	28.801	112.960	87.058	31.083	31.083	-104.469	0.000	0.000	0.000
	1300.00	28.657	115.259	89.140	33.955	33.955	-115.882	0.000	0.000	0.000
	1400.00	28.621	117.381	91.082	36.818	36.818	-127.515	0.000	0.000	0.000
	1500.00	28.670	119.356	92.902	39.682	39.682	-139.353	0.000	0.000	0.000
	1600.00	28.780	121.210	94.614	42.554	42.554	-151.382	0.000	0.000	0.000
	1700.00	28.932	122.959	96.230	45.439	45.439	-163.591	0.000	0.000	0.000
	1800.00	29.108	124.618	97.762	48.341	48.341	-175.971	0.000	0.000	0.000
	1900.00	29.298	126.197	99.217	51.261	51.261	-188.512	0.000	0.000	0.000
	2000.00	29.496	127.704	100.604	54.201	54.201	-201.208	0.000	0.000	0.000
	2019.02	29.534	127.984	100.861	54.762	54.762	-203.640	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja2 MPT= 600.6
LIQ	Ja2	Ja1	Ja2 BPT= 2019.022, L= 177.582 kJ, GAS (Pb)

Pb[g]

LEAD (GAS)

207.200

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	20.786	175.374	175.374	195.200	0.000	142.912	195.200	162.228	-28.422
	300.00	20.786	175.503	175.374	195.238	0.038	142.588	195.189	162.023	-28.211
	400.00	20.786	181.482	176.190	197.317	2.117	124.724	194.537	151.064	-19.727
	500.00	20.786	186.121	177.729	199.396	4.196	106.335	193.803	140.279	-14.655
	600.00	20.786	189.910	179.453	201.474	6.274	87.528	192.984	129.650	-11.287
	700.00	20.786	193.115	181.182	203.553	8.353	68.373	187.243	119.961	-8.952
	800.00	20.809	195.892	182.851	205.633	10.433	48.919	186.306	110.414	-7.209
	900.00	20.810	198.343	184.439	207.714	12.514	29.205	185.402	100.982	-5.861
	1000.00	20.824	200.536	185.941	209.795	14.595	9.259	184.528	91.649	-4.787
	1100.00	20.877	202.523	187.359	211.880	16.680	-10.895	183.689	82.402	-3.913
	1200.00	20.986	204.344	188.700	213.973	18.773	-31.240	182.890	73.229	-3.188
	1300.00	21.160	206.030	189.969	216.079	20.879	-51.760	182.125	64.122	-2.576
	1400.00	21.409	207.607	191.173	218.207	23.007	-72.442	181.389	55.073	-2.055
	1500.00	21.737	209.094	192.319	220.364	25.164	-93.278	180.682	46.075	-1.604
	1600.00	22.148	210.510	193.412	222.557	27.357	-114.259	180.004	37.123	-1.212
	1700.00	22.645	211.867	194.458	224.796	29.596	-135.378	179.357	28.213	-0.867
	1800.00	23.231	213.178	195.461	227.089	31.889	-156.631	178.748	19.340	-0.561
	1900.00	23.906	214.451	196.428	229.446	34.246	-178.012	178.184	10.500	-0.289
	2000.00	24.673	215.697	197.360	231.874	36.674	-199.520	177.673	1.688	-0.044
	2100.00	25.531	216.921	198.262	234.383	39.183	-221.151	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Ja2	Hu1

414.400

LEAD (GAS)

Pb2[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
							kJ / mol			
GAS	298.15	36.923	281.334	281.334	332.600	0.000	248.720	332.600	287.352	–50.343
	300.00	36.937	281.562	281.335	332.668	0.068	248.200	332.569	287.071	–49.983
	400.00	37.505	292.274	282.791	336.393	3.793	219.483	330.832	272.164	–35.541
	500.00	37.865	300.684	285.559	340.163	7.563	189.821	328.976	257.708	–26.923
	600.00	38.136	307.613	288.674	343.963	11.363	159.396	326.983	243.640	–21.211
	700.00	38.366	313.509	291.811	347.789	15.189	128.332	315.170	231.509	–17.275
	800.00	38.571	318.646	294.851	351.636	19.036	96.719	312.982	219.708	–14.345
	900.00	38.764	323.200	297.753	355.502	22.902	64.622	310.878	208.175	–12.082
	1000.00	38.948	327.294	300.506	359.388	26.788	32.094	308.854	196.873	–10.284
	1100.00	39.126	331.014	303.113	363.292	30.692	–0.824	306.911	185.770	–8.821
	1200.00	39.300	334.426	305.582	367.213	34.613	–34.098	305.047	174.840	–7.611
	1300.00	39.472	337.579	307.923	371.152	38.552	–67.700	303.242	164.063	–6.592
	1400.00	39.642	340.510	310.148	375.108	42.508	–101.607	301.472	153.423	–5.724
	1500.00	39.811	343.251	312.264	379.080	46.480	–135.796	299.717	142.910	–4.977
	1600.00	39.979	345.826	314.282	383.070	50.470	–170.251	297.962	132.513	–4.326
	1700.00	40.145	348.254	316.210	387.076	54.476	–204.956	296.198	122.227	–3.756
	1800.00	40.312	350.554	318.054	391.099	58.499	–239.898	294.417	112.044	–3.251
	1900.00	40.477	352.738	319.823	395.138	62.538	–275.063	292.616	101.961	–2.803
	2000.00	40.642	354.818	321.521	399.194	66.594	–310.442	290.792	91.974	–2.402
	2100.00	40.807	356.805	323.154	403.267	70.667	–346.024	–65.500	96.278	–2.395

References

Phase	H / S	C _p
GAS	Ja2	Ja1

899.438

LEAD ARSENATE

Pb3(AsO4)2

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
							kJ / mol			
SOL	298.15	258.002	324.595	324.595	–1780.208	0.000	–1876.986	–1780.208	–1553.089	272.095
	300.00	258.550	326.192	324.600	–1779.730	0.478	–1877.588	–1780.188	–1551.680	270.171
	400.00	280.108	403.834	335.039	–1752.690	27.518	–1914.224	–1778.237	–1475.764	192.715
	500.00	293.604	467.875	355.390	–1723.966	56.242	–1957.903	–1775.321	–1400.471	146.306
	600.00	303.926	522.349	378.789	–1694.072	86.136	–2007.481	–1772.000	–1325.809	115.422
	700.00	312.749	569.875	402.763	–1663.230	116.978	–2062.142	–1782.990	–1249.331	93.226
	800.00	320.774	612.168	426.343	–1631.549	148.659	–2121.283	–1779.173	–1173.348	76.612
	900.00	328.335	650.389	449.147	–1599.090	181.118	–2184.441	–1774.858	–1097.874	63.719
	1000.00	335.607	685.361	471.044	–1565.891	214.317	–2251.252	–1769.991	–1022.909	53.431
	1100.00	342.691	717.681	492.015	–1531.975	248.233	–2321.425	–1764.556	–948.460	45.039
	1200.00	349.646	747.798	512.089	–1497.357	282.851	–2394.715	–1758.712	–874.525	38.067
	1300.00	356.512	776.057	531.319	–1462.049	318.159	–2470.922	–1752.827	–801.083	32.188
	1315.00	357.535	780.153	534.134	–1456.693	323.515	–2482.594	–1751.971	–790.106	31.385

References

Phase	H / S	C _p
SOL	G1	G1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
GAS	298.15	36.922	272.488	272.488	70.919	0.000	-10.323	70.919	31.683	-5.551
	300.00	36.928	272.716	272.489	70.987	0.068	-10.828	70.868	31.440	-5.474
	400.00	37.246	283.386	273.941	74.697	3.778	-38.657	54.605	21.591	-2.819
	500.00	37.452	291.721	276.694	78.433	7.514	-67.428	53.682	13.442	-1.404
	600.00	37.584	298.562	279.785	82.185	11.266	-96.952	52.679	5.487	-0.478
	700.00	37.677	304.363	282.893	85.948	15.029	-127.106	46.755	-1.497	0.112
	800.00	37.752	309.399	285.898	89.720	18.801	-157.799	45.635	-8.313	0.543
	900.00	37.821	313.849	288.761	93.498	22.579	-188.966	44.550	-14.991	0.870
	1000.00	37.893	317.838	291.473	97.284	26.365	-220.554	43.498	-21.550	1.126
	1100.00	37.971	321.453	294.037	101.077	30.158	-252.521	42.481	-28.005	1.330
	1200.00	38.058	324.761	296.461	104.879	33.960	-284.834	41.500	-34.369	1.496
	1300.00	38.156	327.811	298.757	108.689	37.770	-317.465	40.546	-40.653	1.633
	1400.00	38.267	330.642	300.934	112.510	41.591	-350.389	39.608	-46.864	1.749
	1500.00	38.392	333.287	303.004	116.343	45.424	-383.587	38.679	-53.008	1.846
	1600.00	38.530	335.769	304.975	120.189	49.270	-417.041	37.751	-59.090	1.929
	1700.00	38.683	338.109	306.856	124.050	53.131	-450.736	36.823	-65.114	2.001
	1800.00	38.851	340.325	308.654	127.926	57.007	-484.659	35.891	-71.084	2.063
	1900.00	39.034	342.430	310.377	131.820	60.901	-518.798	34.956	-77.001	2.117
	2000.00	39.233	344.438	312.030	135.733	64.814	-553.142	34.018	-82.870	2.164

References

Phase	H / S	C _p
GAS	Ja1	Ja1

367.008

LEAD DIBROMIDE

PbBr₂

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H ₂₉₈)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H ₂₉₈ [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
SOL	298.15	79.598	161.128	161.128	–277.399	0.000	–325.439	–277.399	–260.742	45.681
	300.00	79.593	161.620	161.130	–277.252	0.147	–325.738	–277.441	–260.639	45.381
	400.00	81.255	184.674	164.262	–269.234	8.165	–343.104	–306.637	–248.947	32.509
	500.00	84.683	203.156	170.248	–260.945	16.454	–362.523	–304.853	–234.726	24.522
	600.00	88.785	218.951	177.079	–252.276	25.123	–383.646	–302.798	–220.889	19.230
	644.00	90.717	225.301	180.158	–248.327	29.072	–393.421	–306.607	–214.572	17.404
LIQ			25.533		16.443					
	644.00	112.131	250.834	180.158	–231.884	45.515	–393.421	–290.164	–214.572	17.404
	700.00	112.131	260.183	186.191	–225.605	51.794	–407.733	–287.682	–208.103	15.529
	800.00	112.131	275.157	196.397	–214.391	63.008	–434.517	–283.234	–197.038	12.865
	900.00	112.131	288.364	205.896	–203.178	74.221	–462.706	–278.764	–186.532	10.826
	1000.00	112.131	300.178	214.744	–191.965	85.434	–492.143	–274.271	–176.525	9.221
	1100.00	112.131	310.865	223.004	–180.752	96.647	–522.704	–269.754	–166.968	7.929
	1184.00	112.131	319.117	229.534	–171.333	106.066	–549.167	–265.941	–159.261	7.026

References

Phase	H / S	C _p	Remarks
SOL	Ja2	Ja1	
LIQ	Ja2	Ja1	BPT= 1184., L= 118.1 kJ GAS (PbBr ₂)

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
GAS	298.15	56.916	339.386	339.386	-104.391	0.000	-205.579	-104.391	-140.882	24.682
	300.00	56.931	339.738	339.387	-104.286	0.105	-206.207	-104.475	-141.108	24.569
	400.00	57.472	356.201	341.628	-98.562	5.829	-241.042	-135.964	-146.886	19.181
	500.00	57.730	369.056	345.875	-92.800	11.591	-277.328	-136.708	-149.532	15.621
	600.00	57.872	379.595	350.643	-87.020	17.371	-314.777	-137.542	-152.020	13.234
	700.00	57.958	388.523	355.433	-81.228	23.163	-353.194	-143.305	-153.564	11.459
	800.00	58.015	396.267	360.064	-75.429	28.962	-392.442	-144.271	-154.964	10.118
	900.00	58.054	403.102	364.474	-69.625	34.766	-432.417	-145.211	-156.244	9.068
	1000.00	58.082	409.220	368.648	-63.819	40.572	-473.039	-146.124	-157.420	8.223
	1100.00	58.102	414.757	372.592	-58.009	46.382	-514.242	-147.011	-158.507	7.527
	1200.00	58.118	419.813	376.319	-52.198	52.193	-555.974	-147.872	-159.514	6.943
	1300.00	58.130	424.466	379.846	-46.386	58.005	-598.191	-148.717	-160.449	6.447
	1400.00	58.139	428.774	383.189	-40.572	63.819	-640.856	-149.558	-161.320	6.019
	1500.00	58.147	432.785	386.363	-34.758	69.633	-683.936	-150.405	-162.131	5.646
	1600.00	58.153	436.538	389.383	-28.943	75.448	-727.404	-151.265	-162.885	5.318
	1700.00	58.159	440.064	392.262	-23.127	81.264	-771.236	-152.142	-163.584	5.026
	1800.00	58.163	443.388	395.011	-17.311	87.080	-815.411	-153.041	-164.232	4.766
	1900.00	58.166	446.533	397.641	-11.495	92.896	-859.908	-153.963	-164.828	4.531
	2000.00	58.169	449.517	400.160	-5.678	98.713	-904.712	-154.908	-165.376	4.319

References

Phase	H / S	C _p
GAS	Ja2	Ja1

526.816

LEAD TETRABROMIDE (GAS)

PbBr₄[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	104.630	426.208	426.208	-456.474	0.000	-583.548	-456.474	-473.470	82.950
	300.00	104.670	426.855	426.210	-456.280	0.194	-584.337	-456.610	-473.575	82.457
	400.00	106.121	457.194	430.337	-445.731	10.743	-628.609	-517.756	-466.635	60.936
	500.00	106.814	480.957	438.170	-435.080	21.394	-675.559	-517.302	-453.910	47.420
	600.00	107.196	500.469	446.976	-424.378	32.096	-724.659	-516.933	-441.267	38.416
	700.00	107.430	517.012	455.829	-413.646	42.828	-775.554	-521.491	-427.883	31.929
	800.00	107.583	531.368	464.394	-402.895	53.579	-827.989	-521.253	-414.527	27.066
	900.00	107.688	544.046	472.554	-392.131	64.343	-881.772	-520.989	-401.201	23.285
	1000.00	107.764	555.396	480.280	-381.358	75.116	-936.754	-520.703	-387.907	20.262
	1100.00	107.820	565.670	487.583	-370.579	85.895	-992.816	-520.393	-374.642	17.790
	1200.00	107.862	575.053	494.487	-359.795	96.679	-1049.859	-520.060	-361.406	15.732
	1300.00	107.895	583.688	501.021	-349.007	107.467	-1107.801	-519.715	-348.199	13.991
	1400.00	107.922	591.685	507.215	-338.216	118.258	-1166.575	-519.370	-335.019	12.500
	1500.00	107.943	599.132	513.097	-327.423	129.051	-1226.120	-519.035	-321.863	11.208
	1600.00	107.960	606.099	518.695	-316.628	139.846	-1286.385	-518.717	-308.728	10.079
	1700.00	107.974	612.644	524.030	-305.831	150.643	-1347.326	-518.421	-295.613	9.083
	1800.00	107.986	618.816	529.126	-295.033	161.441	-1408.902	-518.151	-282.515	8.198
	1900.00	107.996	624.655	534.002	-284.234	172.240	-1471.078	-517.908	-269.431	7.407
	2000.00	108.004	630.194	538.674	-273.434	183.040	-1533.823	-517.694	-256.358	6.695

References

Phase	H / S	C _p
GAS	Ja1	Ja1

267.209

LEAD CARBONATE

PbCO₃

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	87.400	131.001	131.001	-699.100	0.000	-738.158	-699.100	-625.384	109.565
	300.00	87.621	131.542	131.003	-698.938	0.162	-738.401	-699.085	-624.927	108.809
	400.00	99.588	158.388	134.582	-689.578	9.522	-752.933	-697.949	-600.360	78.399
	500.00	111.554	181.896	141.737	-679.021	20.079	-769.969	-696.124	-576.159	60.191
	600.00	123.520	203.292	150.237	-667.267	31.833	-789.242	-693.587	-552.392	48.090
	700.00	135.486	223.232	159.255	-654.317	44.783	-810.579	-695.116	-528.314	39.423
	800.00	147.453	242.105	168.442	-640.170	58.930	-833.853	-690.916	-504.760	32.957

References

Phase	H / S	C _p
SOL	Nb1	Ku1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[— —]
GAS	298.15	36.236	259.601	259.601	15.062	0.000	-62.338	15.062	-9.761	1.710
	300.00	36.250	259.825	259.602	15.129	0.067	-62.819	15.048	-9.915	1.726
	400.00	36.827	270.340	261.031	18.785	3.723	-89.351	14.240	-18.117	2.366
	500.00	37.165	278.597	263.748	22.487	7.425	-116.812	13.343	-26.104	2.727
	600.00	37.370	285.393	266.806	26.214	11.152	-145.022	12.356	-33.903	2.951
	700.00	37.507	291.164	269.884	29.958	14.896	-173.857	6.442	-40.732	3.039
	800.00	37.610	296.180	272.864	33.714	18.652	-203.229	5.329	-47.395	3.095
	900.00	37.697	300.615	275.706	37.480	22.418	-233.073	4.246	-53.920	3.129
	1000.00	37.780	304.591	278.399	41.254	26.192	-263.337	3.194	-60.327	3.151
	1100.00	37.866	308.196	280.947	45.036	29.974	-293.979	2.176	-66.629	3.164
	1200.00	37.958	311.494	283.357	48.827	33.765	-324.966	1.193	-72.840	3.171
	1300.00	38.059	314.537	285.640	52.628	37.566	-356.270	0.235	-78.971	3.173
	1400.00	38.172	317.361	287.806	56.439	41.377	-387.866	-0.707	-85.028	3.172
	1500.00	38.297	319.999	289.865	60.263	45.201	-419.736	-1.642	-91.019	3.170
	1600.00	38.435	322.475	291.827	64.099	49.037	-451.861	-2.575	-96.947	3.165
	1700.00	38.588	324.809	293.699	67.950	52.888	-484.226	-3.511	-102.816	3.159
	1800.00	38.755	327.020	295.489	71.817	56.755	-516.818	-4.451	-108.630	3.152
	1900.00	38.937	329.120	297.204	75.702	60.640	-549.626	-5.396	-114.392	3.145
	2000.00	39.134	331.122	298.851	79.605	64.543	-582.639	-6.345	-120.105	3.137

References

Phase	H / S	C _p
GAS	Ja1	Ja1

278.105

LEAD DICHLORIDE

PbCl₂

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H ₂₉₈)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H ₂₉₈ [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
SOL	298.15	77.093	135.980	135.980	–359.406	0.000	–399.948	–359.406	–314.111	55.031
	300.00	77.149	136.457	135.981	–359.263	0.143	–400.200	–359.376	–313.830	54.643
	400.00	80.095	159.058	139.043	–351.400	8.006	–415.023	–357.710	–298.896	39.032
	500.00	82.987	177.242	144.921	–343.246	16.160	–431.867	–355.940	–284.395	29.711
	600.00	85.878	192.627	151.622	–334.803	24.603	–450.379	–354.029	–270.263	23.529
	700.00	88.773	206.083	158.460	–326.070	33.336	–470.328	–356.792	–255.667	19.078
	774.00	90.919	215.110	163.450	–319.422	39.984	–485.917	–355.119	–245.061	16.538
LIQ			28.269		21.880					
	774.00	111.504	243.379	163.450	–297.542	61.864	–485.917	–333.239	–245.061	16.538
	800.00	111.504	247.063	166.108	–294.642	64.764	–492.293	–332.087	–242.118	15.809
	900.00	111.504	260.196	175.847	–283.492	75.914	–517.668	–327.648	–231.139	13.415
	1000.00	111.504	271.944	184.880	–272.342	87.064	–544.286	–323.194	–220.654	11.526
	1100.00	111.504	282.571	193.285	–261.191	98.215	–572.020	–318.721	–210.616	10.001
	1200.00	111.504	292.273	201.136	–250.041	109.365	–600.769	–314.226	–200.987	8.749
	1225.00	111.504	294.573	203.019	–247.253	112.153	–608.105	–313.101	–198.639	8.470

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja2	Ja1	Ja1 BPT= 1225., L= 126.4 kJ

PbCl2[g]

LEAD DICHLORIDE (GAS)

278.105

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
GAS	298.15	55.182	317.205	317.205	-174.054	0.000	-268.629	-174.054	-182.791	32.024
	300.00	55.216	317.546	317.206	-173.952	0.102	-269.216	-174.064	-182.845	31.836
	400.00	56.445	333.622	319.390	-168.361	5.693	-301.810	-174.671	-185.683	24.248
	500.00	57.049	346.290	323.548	-162.683	11.371	-335.828	-175.377	-188.356	19.677
	600.00	57.390	356.724	328.233	-156.960	17.094	-370.994	-176.186	-190.878	16.617
	700.00	57.600	365.587	332.952	-151.209	22.845	-407.120	-181.932	-192.460	14.362
	800.00	57.738	373.288	337.523	-145.442	28.612	-444.073	-182.887	-193.898	12.660
	900.00	57.834	380.095	341.883	-139.663	34.391	-481.748	-183.819	-195.219	11.330
	1000.00	57.903	386.192	346.014	-133.876	40.178	-520.068	-184.728	-196.436	10.261
	1100.00	57.955	391.713	349.922	-128.083	45.971	-558.968	-185.612	-197.564	9.382
	1200.00	57.994	396.758	353.617	-122.286	51.768	-598.395	-186.471	-198.612	8.645
	1300.00	58.024	401.401	357.117	-116.485	57.569	-638.306	-187.315	-199.590	8.020
	1400.00	58.048	405.702	360.435	-110.681	63.373	-678.664	-188.156	-200.503	7.481
	1500.00	58.068	409.708	363.588	-104.875	69.179	-719.436	-189.002	-201.355	7.012
	1600.00	58.084	413.456	366.589	-99.068	74.986	-760.597	-189.863	-202.151	6.600
	1700.00	58.097	416.977	369.451	-93.258	80.796	-802.120	-190.742	-202.892	6.234
	1800.00	58.107	420.298	372.184	-87.448	86.606	-843.985	-191.644	-203.581	5.908
	1900.00	58.116	423.440	374.800	-81.637	92.417	-886.174	-192.571	-204.219	5.614
	2000.00	58.124	426.422	377.307	-75.825	98.229	-928.668	-193.523	-204.807	5.349

References

Phase	H / S	C _p
GAS	Ja2	Ja1

349.011

LEAD TETRACHLORIDE (GAS)

PbCl₄[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	100.533	381.659	381.659	-552.403	0.000	-666.195	-552.403	-513.835	90.022
	300.00	100.616	382.281	381.661	-552.217	0.186	-666.901	-552.392	-513.595	89.425
	400.00	103.665	411.700	385.651	-541.983	10.420	-706.664	-551.824	-500.750	65.391
	500.00	105.181	435.013	393.273	-531.533	20.870	-749.040	-551.328	-488.041	50.985
	600.00	106.038	454.272	401.881	-520.969	31.434	-793.532	-550.931	-475.422	41.389
	700.00	106.568	470.661	410.566	-510.336	42.067	-839.799	-555.472	-462.066	34.480
	800.00	106.919	484.915	418.988	-499.661	52.742	-887.593	-555.224	-448.739	29.300
	900.00	107.162	497.523	427.027	-488.956	63.447	-936.727	-554.956	-435.444	25.273
	1000.00	107.337	508.823	434.651	-478.231	74.172	-987.054	-554.668	-422.180	22.052
	1100.00	107.467	519.060	441.867	-467.490	84.913	-1038.457	-554.358	-408.946	19.419
	1200.00	107.566	528.415	448.695	-456.739	95.664	-1090.837	-554.027	-395.741	17.226
	1300.00	107.643	537.028	455.163	-445.978	106.425	-1144.115	-553.684	-382.565	15.372
	1400.00	107.704	545.008	461.299	-435.210	117.193	-1198.222	-553.342	-369.415	13.783
	1500.00	107.753	552.440	467.130	-424.438	127.965	-1253.098	-553.010	-356.289	12.407
	1600.00	107.792	559.396	472.682	-413.660	138.743	-1308.694	-552.697	-343.184	11.204
	1700.00	107.825	565.932	477.977	-402.879	149.524	-1364.963	-552.408	-330.099	10.143
	1800.00	107.852	572.096	483.036	-392.095	160.308	-1421.868	-552.146	-317.029	9.200
	1900.00	107.875	577.928	487.878	-381.309	171.094	-1479.372	-551.915	-303.974	8.357
	2000.00	107.893	583.461	492.520	-370.521	181.882	-1537.443	-551.716	-290.929	7.598

References

Phase	H / S	C _p
GAS	Ja2	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [(K mol) —————]	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [— —]
GAS	298.15	34.401	249.936	249.936	-80.249	0.000	-154.767	-80.249	-105.220	18.434
	300.00	34.429	250.149	249.937	-80.185	0.064	-155.230	-80.264	-105.375	18.347
	400.00	35.609	260.230	251.303	-76.678	3.571	-180.770	-81.095	-113.622	14.837
	500.00	36.304	268.257	253.918	-73.080	7.169	-207.208	-81.990	-121.651	12.709
	600.00	36.727	274.916	256.879	-69.426	10.823	-234.376	-82.970	-129.493	11.273
	700.00	37.003	280.600	259.872	-65.739	14.510	-262.159	-88.877	-136.367	10.176
	800.00	37.198	285.555	262.779	-62.028	18.221	-290.472	-89.987	-143.075	9.342
	900.00	37.349	289.945	265.558	-58.301	21.948	-319.251	-91.069	-149.646	8.685
	1000.00	37.477	293.887	268.197	-54.559	25.690	-348.446	-92.123	-156.098	8.154
	1100.00	37.594	297.464	270.698	-50.806	29.443	-378.017	-93.146	-162.445	7.714
	1200.00	37.708	300.740	273.067	-47.041	33.208	-407.929	-94.137	-168.701	7.343
	1300.00	37.826	303.763	275.313	-43.264	36.985	-438.156	-95.105	-174.876	7.027
	1400.00	37.950	306.571	277.447	-39.475	40.774	-468.675	-96.061	-180.976	6.752
	1500.00	38.082	309.194	279.477	-35.674	44.575	-499.464	-97.012	-187.008	6.512
	1600.00	38.226	311.656	281.412	-31.859	48.390	-530.508	-97.964	-192.977	6.300
	1700.00	38.382	313.978	283.260	-28.028	52.221	-561.791	-98.920	-198.886	6.111
	1800.00	38.550	316.176	285.028	-24.182	56.067	-593.299	-99.881	-204.738	5.941
	1900.00	38.732	318.266	286.723	-20.318	59.931	-625.022	-100.849	-210.537	5.788
	2000.00	38.929	320.257	288.350	-16.435	63.814	-656.949	-101.822	-216.285	5.649

References

Phase	H / S	C _p
GAS	Ja1	Ja1

245.197

LEAD DIFLUORIDE

PbF₂

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
SOL-A	298.15	72.285	112.968	112.968	-676.971	0.000	-710.652	-676.971	-630.873	110.526
	300.00	72.355	113.415	112.969	-676.837	0.134	-710.862	-676.945	-630.587	109.795
	400.00	76.067	134.742	115.852	-669.415	7.556	-723.312	-675.467	-615.354	80.357
	500.00	79.705	152.107	121.418	-661.626	15.345	-737.680	-673.854	-600.510	62.735
	583.00	82.706	164.573	126.691	-654.886	22.085	-750.832	-672.389	-588.448	52.723
			2.509		1.463					
SOL-B	583.00	81.547	167.082	126.691	-653.423	23.548	-750.832	-670.926	-588.448	52.723
	600.00	91.128	169.563	127.871	-651.955	25.016	-753.693	-670.553	-586.048	51.020
	700.00	147.486	187.843	135.062	-640.025	36.946	-771.515	-669.992	-571.519	42.647
	800.00	105.939	204.825	142.803	-627.353	49.618	-791.213	-663.944	-557.913	36.428
	900.00	94.433	216.638	150.376	-617.335	59.636	-812.309	-660.559	-544.875	31.624
	1000.00	94.433	226.588	157.508	-607.892	69.079	-834.479	-657.751	-532.172	27.798
	1100.00	94.433	235.588	164.204	-598.448	78.523	-857.595	-654.937	-519.750	24.681
	1103.00	94.433	235.845	164.398	-598.165	78.806	-858.302	-654.853	-519.381	24.596
LIQ			13.353		14.728					
	1103.00	109.202	249.198	164.398	-583.437	93.534	-858.302	-640.125	-519.381	24.596
	1200.00	109.202	258.402	171.630	-572.844	104.127	-882.927	-635.954	-508.941	22.154
	1300.00	109.202	267.143	178.646	-561.924	115.047	-909.210	-631.652	-498.531	20.031
	1400.00	109.202	275.236	185.260	-551.004	125.967	-936.334	-627.358	-488.452	18.224
	1500.00	109.202	282.770	191.512	-540.084	136.887	-964.239	-623.078	-478.680	16.669
	1565.00	109.202	287.403	195.399	-532.985	143.986	-982.771	-620.308	-472.482	15.770

References

Phase	H / S	C _p	Remarks
SOL-A	Ja1	Ja1	
SOL-B	Ja2	Ja1	
LIQ	Ja2	Ja1	Ja2 NBPT= 1565., GAS (PbF ₄ , PbF ₂ , PbF, Pb)

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]		[—————]		[————— kJ / mol —————]				[-]
GAS	298.15	50.949	292.692	292.692	-435.136	0.000	-522.402	-435.136	-442.623	77.546
	300.00	51.015	293.007	292.693	-435.042	0.094	-522.944	-435.149	-442.670	77.076
	400.00	53.654	308.084	294.731	-429.795	5.341	-553.028	-435.847	-445.071	58.120
	500.00	55.114	320.228	298.655	-424.350	10.786	-584.464	-436.577	-447.294	46.728
	600.00	55.985	330.360	303.119	-418.791	16.345	-617.007	-437.389	-449.362	39.120
	700.00	56.540	339.035	307.645	-413.163	21.973	-650.487	-443.130	-450.491	33.616
	800.00	56.914	346.611	312.052	-407.489	27.647	-684.778	-444.080	-451.478	29.478
	900.00	57.175	353.330	316.272	-401.784	33.352	-719.781	-445.008	-452.347	26.254
	1000.00	57.365	359.365	320.285	-396.056	39.080	-755.421	-445.915	-453.113	23.668
	1100.00	57.507	364.839	324.090	-390.312	44.824	-791.635	-446.801	-453.790	21.549
	1200.00	57.616	369.848	327.698	-384.556	50.580	-828.373	-447.665	-454.387	19.779
	1300.00	57.700	374.463	331.120	-378.790	56.346	-865.592	-448.518	-454.912	18.279
	1400.00	57.768	378.742	334.371	-373.016	62.120	-903.255	-449.370	-455.372	16.990
	1500.00	57.822	382.729	337.463	-367.237	67.899	-941.331	-450.232	-455.771	15.871
	1600.00	57.867	386.462	340.410	-361.452	73.684	-979.792	-451.109	-456.112	14.891
	1700.00	57.905	389.972	343.223	-355.664	79.472	-1018.616	-452.007	-456.397	14.023
	1800.00	57.937	393.282	345.913	-349.872	85.264	-1057.780	-452.930	-456.629	13.251
	1900.00	57.964	396.416	348.490	-344.077	91.059	-1097.266	-453.878	-456.809	12.559
	2000.00	57.988	399.389	350.961	-338.279	96.857	-1137.058	-454.852	-456.938	11.934

References

Phase	H / S	C _p
GAS	Ja2	Ja1

283.194

LEAD TETRAFLUORIDE (GAS)

PbF4[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	90.933	333.602	333.602	-1133.446	0.000	-1232.909	-1133.446	-1092.667	191.431
	300.00	91.088	334.165	333.604	-1133.278	0.168	-1233.527	-1133.443	-1092.414	190.206
	400.00	97.290	361.311	337.263	-1123.827	9.619	-1268.351	-1133.150	-1078.776	140.874
	500.00	100.731	383.425	344.353	-1113.910	19.536	-1305.623	-1132.773	-1065.226	111.283
	600.00	102.789	401.987	352.454	-1103.726	29.720	-1344.918	-1132.431	-1051.750	91.563
	700.00	104.107	417.938	360.696	-1093.377	40.069	-1385.933	-1137.002	-1037.529	77.421
	800.00	104.998	431.901	368.742	-1082.919	50.527	-1428.440	-1136.773	-1023.334	66.817
	900.00	105.625	444.307	376.462	-1072.386	61.060	-1472.262	-1136.521	-1009.169	58.571
	1000.00	106.082	455.460	383.813	-1061.799	71.647	-1517.259	-1136.250	-995.033	51.975
	1100.00	106.425	465.588	390.794	-1051.173	82.273	-1563.320	-1135.961	-980.925	46.580
	1200.00	106.688	474.860	397.419	-1040.517	92.929	-1610.348	-1135.653	-966.845	42.086
	1300.00	106.893	483.408	403.709	-1029.838	103.608	-1658.267	-1135.339	-952.790	38.284
	1400.00	107.056	491.335	409.688	-1019.140	114.306	-1707.009	-1135.030	-938.760	35.026
	1500.00	107.187	498.726	415.380	-1008.427	125.019	-1756.517	-1134.735	-924.751	32.203
	1600.00	107.293	505.647	420.808	-997.703	135.743	-1806.739	-1134.463	-910.761	29.733
	1700.00	107.381	512.155	425.992	-986.969	146.477	-1857.632	-1134.218	-896.787	27.555
	1800.00	107.453	518.294	430.951	-976.228	157.218	-1909.158	-1134.003	-882.827	25.619
	1900.00	107.514	524.106	435.702	-965.479	167.967	-1961.280	-1133.820	-868.878	23.887
	2000.00	107.564	529.622	440.261	-954.725	178.721	-2013.969	-1133.671	-854.937	22.329

References

Phase	H / S	C _p
GAS	Ja2	Ja1

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		[————— J / (K mol) —————]		[—————]		[————— kJ / mol —————]				[-]
GAS	298.15	29.332	220.761	220.761	236.396	0.000	170.576	236.396	209.373	-36.681
	300.00	29.360	220.943	220.762	236.450	0.054	170.168	236.374	209.205	-36.426
	400.00	30.621	229.571	221.930	239.453	3.057	147.624	235.193	200.328	-26.160
	500.00	31.612	236.514	224.174	242.566	6.170	124.309	234.032	191.746	-20.032
	600.00	32.471	242.355	226.730	245.771	9.375	100.358	232.875	183.398	-15.966
	700.00	33.245	247.419	229.332	249.057	12.661	75.864	226.873	176.040	-13.136
	800.00	33.953	251.905	231.879	252.418	16.022	50.893	225.740	168.856	-11.025
	900.00	34.605	255.943	234.332	255.846	19.450	25.497	224.695	161.809	-9.391
	1000.00	35.205	259.620	236.679	259.337	22.941	-0.283	223.730	154.874	-8.090
	1100.00	35.757	263.002	238.921	262.885	26.489	-26.417	222.835	148.033	-7.029
	1200.00	36.262	266.135	241.060	266.487	30.091	-52.876	222.005	141.269	-6.149
	1300.00	36.722	269.056	243.102	270.136	33.740	-79.637	221.223	134.573	-5.407
	1400.00	37.136	271.793	245.055	273.830	37.434	-106.681	220.471	127.936	-4.773
	1500.00	37.506	274.368	246.924	277.562	41.166	-133.990	219.735	121.353	-4.226
	1600.00	37.831	276.799	248.716	281.329	44.933	-161.549	219.005	114.818	-3.748
	1700.00	38.112	279.101	250.436	285.127	48.731	-189.345	218.270	108.328	-3.329
	1800.00	38.349	281.287	252.090	288.950	52.554	-217.366	217.525	101.883	-2.957
	1900.00	38.543	283.365	253.682	292.795	56.399	-245.599	216.763	95.479	-2.625
	2000.00	38.693	285.346	255.216	296.657	60.261	-274.036	215.981	89.115	-2.327

References

Phase	H / S	C _p
GAS	Ja1	Ja1

334.104

LEAD MONOIODIDE (GAS)

PbI[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	37.155	280.094	280.094	107.738	0.000	24.228	107.738	60.858	-10.662
	300.00	37.159	280.324	280.095	107.807	0.069	23.710	107.707	60.567	-10.546
	400.00	37.367	291.043	281.555	111.533	3.795	-4.884	97.883	45.399	-5.929
	500.00	37.516	299.398	284.318	115.278	7.540	-34.421	74.718	34.535	-3.608
	600.00	37.613	306.248	287.420	119.035	11.297	-64.714	73.703	26.592	-2.315
	700.00	37.682	312.051	290.534	122.800	15.062	-95.636	67.767	19.622	-1.464
	800.00	37.740	317.087	293.546	126.571	18.833	-127.099	66.635	12.822	-0.837
	900.00	37.795	321.535	296.413	130.348	22.610	-159.034	65.536	6.162	-0.358
	1000.00	37.855	325.520	299.128	134.130	26.392	-191.390	64.469	-0.378	0.020
	1100.00	37.922	329.131	301.694	137.919	30.181	-224.126	63.437	-6.812	0.323
	1200.00	38.000	332.434	304.120	141.715	33.977	-257.206	62.441	-13.154	0.573
	1300.00	38.090	335.479	306.417	145.519	37.781	-290.604	61.469	-19.414	0.780
	1400.00	38.192	338.306	308.595	149.333	41.595	-324.295	60.513	-25.600	0.955
	1500.00	38.309	340.945	310.664	153.158	45.420	-358.259	59.564	-31.718	1.105
	1600.00	38.439	343.421	312.635	156.996	49.258	-392.478	58.616	-37.773	1.233
	1700.00	38.585	345.756	314.515	160.847	53.109	-426.938	57.666	-43.768	1.345
	1800.00	38.745	347.966	316.313	164.713	56.975	-461.625	56.712	-49.707	1.442
	1900.00	38.921	350.065	318.035	168.596	60.858	-496.528	55.753	-55.593	1.528
	2000.00	39.112	352.066	319.686	172.498	64.760	-531.635	54.790	-61.428	1.604

References

Phase	H / S	C _p
GAS	Ja2	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	77.561	174.836	174.836	-175.393	0.000	-227.520	-175.393	-173.577	30.410
	300.00	77.624	175.316	174.837	-175.249	0.144	-227.844	-175.400	-173.566	30.220
	400.00	78.855	197.868	177.905	-167.408	7.985	-246.555	-191.927	-172.329	22.504
	500.00	80.392	215.599	183.731	-159.459	15.934	-267.258	-234.985	-163.290	17.059
	600.00	83.713	230.522	190.315	-151.269	24.124	-289.582	-233.443	-149.093	12.980
	683.00	87.769	241.614	195.884	-144.160	31.233	-309.182	-236.760	-136.862	10.467
LIQ			34.305		23.430					
	683.00	108.575	275.918	195.884	-120.730	54.663	-309.182	-213.330	-136.862	10.467
	700.00	108.575	278.588	197.861	-118.884	56.509	-313.895	-212.640	-134.967	10.071
	800.00	108.575	293.086	208.878	-108.027	67.366	-342.495	-208.572	-124.148	8.106
	900.00	108.575	305.874	218.959	-97.169	78.224	-372.456	-204.481	-113.841	6.607
	1000.00	108.575	317.314	228.232	-86.312	89.081	-403.625	-200.366	-103.990	5.432
	1100.00	108.575	327.662	236.808	-75.454	99.939	-435.882	-196.226	-94.552	4.490
	1104.00	108.575	328.056	237.138	-75.020	100.373	-437.194	-196.060	-94.183	4.456

References

Phase	H / S	C _p	Remarks
SOL	Ja2	Ja1	
LIQ	Ja2	Ja1	Ja2 BPT= 1104., L= 118.57 kJ

461.009

LEAD DIIODIDE (GAS)

PbI2[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
GAS	298.15	57.614	359.552	359.552	-3.180	0.000	-110.380	-3.180	-56.437	9.888
	300.00	57.622	359.908	359.553	-3.073	0.107	-111.046	-3.224	-56.767	9.884
	400.00	57.871	376.524	361.817	2.703	5.883	-147.907	-21.817	-73.681	9.622
	500.00	57.988	389.452	366.099	8.497	11.677	-186.229	-67.030	-82.262	8.594
	600.00	58.052	400.031	370.899	14.299	17.479	-225.719	-67.875	-85.230	7.420
	700.00	58.091	408.983	375.717	20.106	23.286	-266.182	-73.650	-87.253	6.511
	800.00	58.117	416.741	380.370	25.917	29.097	-307.476	-74.629	-89.129	5.820
	900.00	58.134	423.588	384.799	31.729	34.909	-349.500	-75.582	-90.884	5.275
	1000.00	58.147	429.713	388.990	37.543	40.723	-392.170	-76.511	-92.535	4.834
	1100.00	58.156	435.256	392.948	43.359	46.539	-435.423	-77.414	-94.093	4.468
	1200.00	58.163	440.316	396.688	49.175	52.355	-479.205	-78.291	-95.571	4.160
	1300.00	58.169	444.972	400.225	54.991	58.171	-523.473	-79.154	-96.975	3.897
	1400.00	58.173	449.283	403.577	60.808	63.988	-568.188	-80.014	-98.314	3.668
	1500.00	58.177	453.297	406.760	66.626	69.806	-613.319	-80.881	-99.591	3.468
	1600.00	58.180	457.051	409.787	72.444	75.624	-658.839	-81.761	-100.810	3.291
	1700.00	58.182	460.579	412.672	78.262	81.442	-704.722	-82.660	-101.973	3.133
	1800.00	58.184	463.904	415.427	84.080	87.260	-750.948	-83.582	-103.082	2.991
	1900.00	58.186	467.050	418.062	89.898	93.078	-797.497	-84.528	-104.140	2.863
	2000.00	58.187	470.035	420.586	95.717	98.897	-844.352	-85.498	-105.147	2.746

References

Phase	H / S	C _p
GAS	Ja2	Ja1

PbI4[g]

LEAD TETRAIODIDE (GAS)

714.818

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	106.311	466.266	466.266	-224.467	0.000	-363.484	-224.467	-274.913	48.164
	300.00	106.333	466.924	466.268	-224.270	0.197	-364.347	-224.522	-275.226	47.921
	400.00	107.090	497.633	470.450	-213.594	10.873	-412.647	-259.853	-290.535	37.940
	500.00	107.444	521.572	478.368	-202.865	21.602	-463.651	-348.325	-289.659	30.260
	600.00	107.639	541.180	487.252	-192.110	32.357	-516.818	-347.969	-277.961	24.199
	700.00	107.756	557.782	496.172	-181.340	43.127	-571.787	-352.544	-265.519	19.813
	800.00	107.833	572.176	504.793	-170.560	53.907	-628.301	-352.325	-253.101	16.526
	900.00	107.886	584.880	512.999	-159.774	64.693	-686.166	-352.085	-240.713	13.971
	1000.00	107.923	596.249	520.766	-148.984	75.483	-745.233	-351.825	-228.352	11.928
	1100.00	107.951	606.537	528.103	-138.190	86.277	-805.380	-351.544	-216.018	10.258
	1200.00	107.973	615.931	535.036	-127.394	97.073	-866.510	-351.242	-203.710	8.867
	1300.00	107.989	624.574	541.596	-116.595	107.872	-928.541	-350.932	-191.429	7.692
	1400.00	108.003	632.577	547.812	-105.796	118.671	-991.404	-350.623	-179.171	6.685
	1500.00	108.013	640.029	553.714	-94.995	129.472	-1055.038	-350.326	-166.935	5.813
	1600.00	108.022	647.000	559.329	-84.193	140.274	-1119.394	-350.049	-154.718	5.051
	1700.00	108.029	653.549	564.681	-73.391	151.076	-1184.424	-349.796	-142.517	4.379
	1800.00	108.035	659.724	569.791	-62.587	161.880	-1250.091	-349.570	-130.331	3.782
	1900.00	108.041	665.565	574.679	-51.784	172.683	-1316.358	-349.375	-118.157	3.248
	2000.00	108.045	671.107	579.363	-40.979	183.488	-1383.194	-349.210	-105.992	2.768

References

Phase	H / S	C _p
GAS	Ja2	Ja1

Pb2I4[g]

DILEAD TETRAIODIDE (GAS)

922.018

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	130.774	540.808	540.808	-138.687	0.000	-299.929	-138.687	-192.042	33.645
	300.00	130.802	541.617	540.810	-138.445	0.242	-300.930	-138.746	-192.373	33.495
	400.00	131.785	579.401	545.955	-125.309	13.378	-357.069	-174.348	-208.618	27.243
	500.00	132.237	608.862	555.698	-112.105	26.582	-416.536	-263.158	-208.600	21.792
	600.00	132.482	632.996	566.631	-98.868	39.819	-478.665	-263.217	-197.686	17.210
	700.00	132.627	653.430	577.608	-85.612	53.075	-543.013	-273.125	-185.156	13.817
	800.00	132.721	671.146	588.218	-72.344	66.343	-609.261	-273.436	-172.567	11.267
	900.00	132.784	686.782	598.318	-59.069	79.618	-677.173	-273.692	-159.943	9.283
	1000.00	132.827	700.775	607.876	-45.788	92.899	-746.563	-273.897	-147.292	7.694
	1100.00	132.859	713.436	616.906	-32.504	106.183	-817.283	-274.048	-134.624	6.393
	1200.00	132.882	724.997	625.439	-19.217	119.470	-889.213	-274.148	-121.944	5.308

References

Phase	H / S	C _p
GAS	H3	H3

367.138

LEAD MOLYBDATE



Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	119.700	166.105	166.105	-1052.318	0.000	-1101.842	-1052.318	-951.672	166.729
	300.00	119.989	166.846	166.107	-1052.096	0.222	-1102.150	-1052.299	-951.048	165.592
	400.00	131.616	203.111	170.973	-1039.463	12.855	-1120.707	-1050.792	-917.502	119.813
	500.00	139.223	233.341	180.508	-1025.901	26.417	-1142.572	-1048.711	-884.412	92.394
	600.00	145.247	259.272	191.525	-1011.669	40.649	-1167.233	-1046.313	-851.774	74.153
	700.00	150.523	282.065	202.863	-996.876	55.442	-1194.322	-1048.521	-818.759	61.097
	800.00	155.402	302.486	214.061	-981.578	70.740	-1223.567	-1045.633	-786.129	51.329
	900.00	160.049	321.060	224.933	-965.804	86.514	-1254.758	-1042.422	-753.880	43.754
	1000.00	164.553	338.157	235.412	-949.573	102.745	-1287.730	-1038.884	-722.007	37.714
	1100.00	168.962	354.048	245.483	-932.896	119.422	-1322.349	-1035.013	-690.504	32.789
	1200.00	173.307	368.936	255.157	-915.782	136.536	-1358.506	-1030.807	-659.368	28.702

References

Phase	H / S	C _p
SOL	Nb1	e

PbO**LEAD OXIDE (YELLOW, MASSICOT)**

223.199

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
SOL-Y	298.15	45.772	68.699	68.699	-218.062	0.000	-238.545	-218.062	-188.647	33.050
	300.00	45.835	68.982	68.700	-217.977	0.085	-238.672	-218.054	-188.464	32.815
	400.00	48.526	82.566	70.534	-213.249	4.813	-246.275	-217.542	-178.674	23.332
	500.00	50.463	93.610	74.078	-208.296	9.766	-255.101	-216.931	-169.026	17.658
	600.00	52.104	102.959	78.132	-203.166	14.896	-264.941	-216.278	-159.506	13.886
	700.00	53.604	111.104	82.273	-197.880	20.182	-275.653	-220.439	-149.301	11.141
	800.00	55.029	118.356	86.338	-192.448	25.614	-287.133	-219.692	-139.188	9.088
	900.00	56.410	124.917	90.266	-186.876	31.186	-299.301	-218.808	-129.176	7.497
	1000.00	57.763	130.931	94.036	-181.167	36.895	-312.098	-217.785	-119.271	6.230
	1100.00	59.100	136.499	97.646	-175.324	42.738	-325.473	-216.620	-109.475	5.199
	1159.00	59.884	139.607	99.704	-171.814	46.248	-333.618	-215.864	-103.747	4.676
LIQ			22.021		25.522					
	1159.00	65.000	161.628	99.704	-146.292	71.770	-333.618	-190.342	-103.747	4.676
	1200.00	65.000	163.888	101.858	-143.627	74.435	-340.292	-189.590	-100.697	4.383
	1300.00	65.000	169.090	106.832	-137.127	80.935	-356.944	-187.753	-93.364	3.751
	1400.00	65.000	173.908	111.454	-130.627	87.435	-374.097	-185.923	-86.172	3.215
	1500.00	65.000	178.392	115.768	-124.127	93.935	-391.715	-184.107	-79.110	2.755
	1600.00	65.000	182.587	119.815	-117.627	100.435	-409.766	-182.313	-72.169	2.356
	1700.00	65.000	186.528	123.624	-111.127	106.935	-428.224	-180.544	-65.340	2.008
	1800.00	65.000	190.243	127.223	-104.627	113.435	-447.064	-178.804	-58.613	1.701
	1900.00	65.000	193.757	130.633	-98.127	119.935	-466.265	-177.094	-51.983	1.429
	2000.00	65.000	197.091	133.874	-91.627	126.435	-485.809	-175.415	-45.441	1.187

References

Phase	H / S	C _p	Remarks
SOL-Y	Ja2,e	Ja2	Ja2 Metastable below 762 K
LIQ	Ja2	Ja1	Vapor. to (PbO) _x , x= 1 to 6

223.199		LEAD OXIDE (GAS)							PbO[g]	
Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	32.510	240.039	240.039	70.291	0.000	-1.277	70.291	48.621	-8.518
	300.00	32.544	240.240	240.040	70.351	0.060	-1.721	70.274	48.487	-8.442
	400.00	34.124	249.833	241.337	73.690	3.399	-26.244	69.396	41.358	-5.401
	500.00	35.152	257.567	243.834	77.157	6.866	-51.626	68.522	34.449	-3.599
	600.00	35.821	264.039	246.677	80.708	10.417	-77.715	67.596	27.720	-2.413
	700.00	36.279	269.597	249.564	84.314	14.023	-104.404	61.756	21.948	-1.638
	800.00	36.606	274.464	252.378	87.960	17.669	-131.612	60.715	16.333	-1.066
	900.00	36.851	278.791	255.077	91.633	21.342	-159.279	59.700	10.846	-0.630
	1000.00	37.040	282.683	257.646	95.328	25.037	-187.355	58.709	5.472	-0.286
	1100.00	37.192	286.221	260.086	99.040	28.749	-215.803	57.743	0.195	-0.009
	1200.00	37.316	289.463	262.401	102.765	32.474	-244.590	56.802	-4.995	0.217
	1300.00	37.421	292.454	264.599	106.502	36.211	-273.688	55.876	-10.107	0.406
	1400.00	37.511	295.230	266.689	110.249	39.958	-303.073	54.953	-15.148	0.565
	1500.00	37.590	297.821	268.679	114.004	43.713	-332.727	54.023	-20.123	0.701
	1600.00	37.661	300.249	270.577	117.767	47.476	-362.632	53.080	-25.036	0.817
	1700.00	37.726	302.535	272.390	121.536	51.245	-392.773	52.118	-29.889	0.918
	1800.00	37.786	304.693	274.126	125.312	55.021	-423.135	51.134	-34.684	1.007
	1900.00	37.843	306.737	275.789	129.094	58.803	-453.707	50.126	-39.425	1.084
	2000.00	37.898	308.680	277.385	132.881	62.590	-484.479	49.092	-44.111	1.152
	2100.00	37.951	310.530	278.920	136.673	66.382	-515.440	-129.191	-41.645	1.036
	2200.00	38.003	312.297	280.397	140.471	70.180	-546.582	-129.897	-37.460	0.889
	2300.00	38.056	313.987	281.821	144.274	73.983	-577.897	-130.709	-33.241	0.755
	2400.00	38.109	315.608	283.195	148.082	77.791	-609.377	-131.636	-28.984	0.631
	2500.00	38.163	317.165	284.523	151.895	81.604	-641.017	-132.687	-24.685	0.516

References

Phase	H / S	C _p
GAS	Ja2	Ja2

223.199		LEAD OXIDE (RED)							PbO[R]	
Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-R	298.15	45.763	66.324	66.324	-219.402	0.000	-239.177	-219.402	-189.279	33.161
	300.00	45.876	66.607	66.325	-219.317	0.085	-239.299	-219.394	-189.092	32.924
	400.00	50.373	80.474	68.185	-214.487	4.915	-246.676	-218.780	-179.075	23.385
	500.00	53.433	92.064	71.834	-209.287	10.115	-255.319	-217.922	-169.244	17.681
	600.00	55.392	101.994	76.053	-203.837	15.565	-265.034	-216.949	-159.599	13.894
	700.00	56.654	110.632	80.390	-198.232	21.170	-275.675	-220.791	-149.323	11.143
	762.00	57.429	115.472	83.049	-194.696	24.706	-282.686	-220.159	-143.019	9.804

References

Phase	H / S	C _p	Remarks
SOL-R	Ja2,e	Ja2	Ja2 TPT= 762. (PbO red - yellow), L= 0.167

PbO₂**LEAD DIOXIDE**

239.199

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	61.119	71.797	71.797	-274.470	0.000	-295.876	-274.470	-215.396	37.737
	300.00	61.285	72.176	71.799	-274.357	0.113	-296.010	-274.461	-215.030	37.440
	400.00	67.772	90.792	74.293	-267.870	6.600	-304.187	-273.676	-195.324	25.507
	500.00	71.635	106.360	79.193	-260.887	13.583	-314.066	-272.564	-175.860	18.372
	600.00	74.295	119.669	84.857	-253.583	20.887	-325.384	-271.317	-156.636	13.636
	700.00	76.239	131.275	90.677	-246.051	28.419	-337.944	-274.859	-136.828	10.210
	800.00	77.671	141.554	96.406	-238.352	36.118	-351.595	-273.514	-117.200	7.652
	900.00	78.689	150.765	101.943	-230.531	43.939	-366.219	-272.084	-97.746	5.673
	1000.00	79.343	159.092	107.248	-222.626	51.844	-381.718	-270.596	-78.454	4.098
	1100.00	79.662	166.672	112.311	-214.673	59.797	-398.012	-269.076	-59.313	2.817
	1200.00	79.664	173.606	117.134	-206.704	67.766	-415.031	-267.548	-40.311	1.755

References

Phase	H / S	C _p
SOL	Ja1	Ja1

Pb₃O₄**TRILEAD TETRAOXIDE**

685.598

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	154.933	211.961	211.961	-718.686	0.000	-781.882	-718.686	-601.606	105.399
	300.00	155.325	212.921	211.964	-718.399	0.287	-782.275	-718.657	-600.880	104.622
	400.00	173.180	260.235	218.293	-701.909	16.777	-806.003	-716.301	-561.937	73.381
	500.00	183.935	300.140	230.781	-684.006	34.680	-834.076	-712.954	-523.720	54.713
	600.00	190.557	334.303	245.257	-665.259	53.427	-865.840	-709.216	-486.221	42.329
	700.00	195.303	364.048	260.148	-645.956	72.730	-900.790	-719.881	-446.970	33.353
	800.00	199.357	390.396	274.814	-626.220	92.466	-938.537	-715.872	-408.252	26.656
	900.00	203.287	414.103	288.995	-606.089	112.597	-978.781	-711.507	-370.058	21.478
	1000.00	207.332	435.729	302.602	-585.559	133.127	-1021.288	-706.766	-332.370	17.361
	1100.00	211.548	455.687	315.623	-564.616	154.070	-1065.872	-701.612	-295.176	14.017
	1200.00	215.885	474.279	328.079	-543.245	175.441	-1112.380	-696.016	-258.471	11.251
	1300.00	220.229	491.731	340.003	-521.439	197.247	-1160.690	-689.991	-222.251	8.930
	1400.00	224.429	508.207	351.434	-499.204	219.482	-1210.694	-683.572	-186.509	6.959
	1500.00	228.306	523.826	362.411	-476.564	242.122	-1262.302	-676.806	-151.239	5.267

References

Phase	H / S	C _p
SOL	Ja1	Ja1

292.820

LEAD DIBORATE

PbB2O4

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	107.570	130.541	130.541	-1556.448	0.000	-1595.369	-1556.448	-1450.247	254.077
	300.00	107.713	131.207	130.543	-1556.249	0.199	-1595.611	-1556.449	-1449.589	252.396
	400.00	127.800	164.623	134.961	-1544.583	11.865	-1610.433	-1556.186	-1413.981	184.647
	500.00	149.048	195.518	144.019	-1530.699	25.749	-1628.457	-1554.693	-1378.576	144.019
	600.00	164.969	224.176	155.022	-1514.956	41.492	-1649.461	-1552.128	-1343.579	116.969
	700.00	176.635	250.527	166.811	-1497.846	58.602	-1673.215	-1553.657	-1308.278	97.625
	800.00	185.387	274.711	178.808	-1479.726	76.722	-1699.494	-1549.794	-1273.481	83.150
	900.00	192.167	296.954	190.716	-1460.834	95.614	-1728.093	-1545.463	-1239.198	71.921
	1000.00	197.591	317.491	202.380	-1441.337	115.111	-1758.828	-1540.769	-1205.417	62.965
	1100.00	202.059	336.540	213.721	-1421.348	135.100	-1791.541	-1535.782	-1172.121	55.659
	1200.00	205.838	354.287	224.704	-1400.948	155.500	-1826.093	-1530.550	-1139.290	49.592
	1300.00	209.110	370.895	235.318	-1380.197	176.251	-1862.361	-1525.120	-1106.904	44.476
	1400.00	212.001	386.500	245.565	-1359.139	197.309	-1900.239	-1519.530	-1074.942	40.107
	1500.00	214.599	401.216	255.456	-1337.807	218.641	-1939.631	-1513.813	-1043.384	36.334

References

Phase	H / S	C _p
SOL	Ja1	Ja1

362.440

LEAD TETRABORATE

PbB4O7

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	168.128	166.942	166.942	-2857.672	0.000	-2907.446	-2857.672	-2667.101	467.265
	300.00	168.922	167.984	166.945	-2857.360	0.312	-2907.755	-2857.684	-2665.919	464.178
	400.00	206.970	221.993	174.051	-2838.495	19.177	-2927.293	-2857.408	-2601.991	339.785
	500.00	238.333	271.647	188.673	-2816.185	41.487	-2952.009	-2855.539	-2538.321	265.177
	600.00	264.801	317.508	206.373	-2790.991	66.681	-2981.496	-2852.222	-2475.166	215.482
	700.00	286.989	360.047	225.325	-2763.367	94.305	-3015.400	-2852.429	-2411.876	179.976
	800.00	305.153	399.598	244.667	-2733.727	123.945	-3053.406	-2846.618	-2349.323	153.395
	900.00	319.415	436.401	263.951	-2702.466	155.206	-3095.228	-2839.791	-2287.562	132.767
	1000.00	329.840	470.628	282.928	-2669.972	187.700	-3140.600	-2832.218	-2226.604	116.306
	1100.00	336.464	502.406	301.454	-2636.625	221.047	-3189.272	-2824.197	-2166.428	102.875
	1200.00	349.690	532.709	319.480	-2601.796	255.876	-3241.047	-2815.036	-2107.036	91.717
	1300.00	352.489	560.810	336.976	-2566.687	290.985	-3295.740	-2805.906	-2048.406	82.306
	1400.00	355.289	587.035	353.911	-2531.298	326.374	-3353.147	-2796.785	-1990.479	74.266
	1500.00	358.088	611.643	370.281	-2495.629	362.043	-3413.093	-2787.660	-1933.204	67.320
	1600.00	360.887	634.843	386.098	-2459.681	397.991	-3475.429	-2778.523	-1876.538	61.263
	1700.00	363.686	656.805	401.382	-2423.452	434.220	-3540.021	-2769.366	-1820.444	55.935
	1800.00	366.485	677.672	416.156	-2386.943	470.729	-3606.753	-2760.183	-1764.890	51.216
	1900.00	369.284	697.562	430.448	-2350.155	507.517	-3675.523	-2750.970	-1709.847	47.007
	2000.00	372.083	716.575	444.282	-2313.087	544.585	-3746.236	-2741.721	-1655.291	43.232

References

Phase	H / S	C _p
SOL	Ja1	Ja1

PbO*PbCO3

DILEAD OXIDE CARBONATE

490.409

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	133.366	204.221	204.221	-918.388	0.000	-979.276	-918.388	-816.604	143.066
	300.00	133.637	205.047	204.224	-918.141	0.247	-979.655	-918.365	-815.973	142.074
	400.00	148.281	245.497	209.640	-904.045	14.343	-1002.244	-916.710	-782.069	102.128
	500.00	162.925	280.158	220.352	-888.485	29.903	-1028.564	-914.224	-748.680	78.214
	600.00	177.569	311.158	232.944	-871.460	46.928	-1058.155	-910.892	-715.869	62.322
	700.00	192.213	339.630	246.177	-852.971	65.417	-1090.712	-916.329	-682.095	50.899

References

Phase	H / S	C _p
SOL	Nb1	e

PbO*PbSO4

DILEAD OXIDE SULFATE

526.463

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	116.937	223.317	223.317	-1157.453	0.000	-1224.035	-1157.453	-1022.935	179.214
	300.00	117.399	224.042	223.319	-1157.236	0.217	-1224.449	-1157.514	-1022.100	177.963
	400.00	138.605	260.865	228.197	-1144.386	13.067	-1248.732	-1162.133	-976.467	127.513
	500.00	156.016	293.705	238.072	-1129.636	27.817	-1276.489	-1164.559	-929.765	97.132
	600.00	171.934	323.572	249.868	-1113.231	44.222	-1307.374	-1165.422	-882.697	76.846
	700.00	187.147	351.224	262.395	-1095.273	62.180	-1341.130	-1174.549	-834.010	62.235
	800.00	201.984	377.186	275.137	-1075.814	81.639	-1377.563	-1172.827	-785.465	51.286
	900.00	216.602	401.822	287.855	-1054.883	102.570	-1416.523	-1222.588	-736.060	42.720
	1000.00	231.085	425.394	300.439	-1032.498	124.955	-1457.892	-1216.602	-682.309	35.640
	1100.00	245.479	448.094	312.836	-1008.669	148.784	-1501.572	-1209.235	-629.225	29.879
	1200.00	259.813	470.068	325.028	-983.404	174.049	-1547.486	-1200.475	-576.873	25.111

References

Phase	H / S	C _p	Remarks
SOL	Ke	Ke	La1 MPT= 1243.

749.662

TRILEAD DIOXIDE SULFATE

2PbO*PbSO4

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	208.564	294.244	294.244	-1373.059	0.000	-1460.788	-1373.059	-1209.790	211.950
	300.00	208.698	295.535	294.248	-1372.673	0.386	-1461.333	-1373.027	-1208.777	210.467
	400.00	219.154	356.882	302.542	-1351.323	21.736	-1494.076	-1373.364	-1154.210	150.724
	500.00	232.822	407.219	318.580	-1328.740	44.319	-1532.349	-1372.298	-1099.550	114.869
	600.00	247.754	450.975	337.073	-1304.718	68.341	-1575.303	-1370.021	-1045.191	90.992
	700.00	263.282	490.327	356.199	-1279.169	93.890	-1622.398	-1381.004	-988.927	73.795
	800.00	279.129	526.515	375.255	-1252.051	121.008	-1673.263	-1376.308	-933.221	60.933
	900.00	295.160	560.316	393.959	-1223.337	149.722	-1727.622	-1422.975	-877.034	50.902
	1000.00	311.307	592.249	412.205	-1193.015	180.044	-1785.264	-1413.737	-816.855	42.668

References

Phase	H / S	C _p	Remarks
SOL	Ke	Ke	La1 MPT= 1223.

972.862

TETRALEAD TRIOXIDE SULFATE

3PbO*PbSO4

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	240.528	340.578	340.578	-1626.739	0.000	-1728.282	-1626.739	-1427.386	250.072
	300.00	240.912	342.067	340.582	-1626.294	0.445	-1728.914	-1626.725	-1426.149	248.315
	400.00	259.388	413.990	350.264	-1601.249	25.490	-1766.845	-1627.583	-1359.377	177.516
	500.00	275.599	473.636	369.135	-1574.488	52.251	-1811.307	-1626.682	-1292.433	135.020
	600.00	290.919	525.247	390.945	-1546.158	80.581	-1861.306	-1624.573	-1225.759	106.712
	700.00	305.818	571.215	413.471	-1516.318	110.421	-1916.169	-1640.712	-1156.346	86.288
	800.00	320.493	613.011	435.839	-1485.001	141.738	-1975.410	-1636.503	-1087.424	71.001

References

Phase	H / S	C _p
SOL	Nb1	e

4PbO*PbSO4

PENTALEAD TETRAOXIDE SULFATE

1196.061

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
[————— kJ / mol —————]										
SOL	298.15	288.951	424.592	424.592	-1828.944	0.000	-1955.536	-1828.944	-1604.742	281.144
	300.00	289.270	426.380	424.598	-1828.409	0.535	-1956.323	-1828.917	-1603.351	279.168
	400.00	306.899	511.999	436.152	-1798.605	30.339	-2003.405	-1829.233	-1528.336	199.580
	500.00	324.879	582.409	458.558	-1767.018	61.926	-2058.223	-1827.847	-1453.274	151.822
	600.00	342.998	643.242	484.377	-1733.625	95.319	-2119.570	-1825.152	-1378.588	120.017
	700.00	361.183	697.480	511.012	-1698.416	130.528	-2186.653	-1845.369	-1300.477	97.043
	800.00	379.403	746.899	537.453	-1661.387	167.557	-2258.906	-1840.134	-1222.975	79.852
	900.00	397.642	792.639	563.296	-1622.535	206.409	-2335.910	-1886.038	-1145.072	66.458
	1000.00	415.895	835.479	588.394	-1581.858	247.086	-2417.338	-1875.818	-1063.274	55.540
	1100.00	434.156	875.975	612.713	-1539.356	289.588	-2502.928	-1863.812	-982.586	46.659
	1168.00	446.576	902.385	628.812	-1509.411	319.533	-2563.397	-1854.608	-928.385	41.519

References

Phase	H / S	C _p	Remarks
SOL	Ke	Ke	Ke MPT= 1168.

PbSiO3

LEAD METASILICATE

283.284

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
[————— kJ / mol —————]										
SOL	298.15	90.069	109.926	109.926	-1144.993	0.000	-1177.767	-1144.993	-1061.094	185.899
	300.00	90.308	110.484	109.928	-1144.826	0.167	-1177.971	-1144.994	-1060.573	184.662
	400.00	102.781	138.226	113.625	-1135.153	9.840	-1190.443	-1144.631	-1032.464	134.826
	500.00	112.108	162.224	121.000	-1124.381	20.612	-1205.493	-1143.539	-1004.537	104.943
	600.00	118.673	183.278	129.662	-1112.823	32.170	-1222.790	-1141.994	-976.876	85.045
	700.00	123.325	201.942	138.680	-1100.710	44.283	-1242.069	-1145.031	-948.700	70.793
	800.00	126.613	218.637	147.650	-1088.203	56.790	-1263.113	-1143.056	-920.785	60.121
	900.00	128.866	233.689	156.388	-1075.422	69.571	-1285.742	-1140.929	-893.127	51.836
	1000.00	130.281	247.346	164.811	-1062.458	82.535	-1309.804	-1138.722	-865.712	45.220
	1037.00	130.619	252.086	167.841	-1057.631	87.362	-1319.044	-1137.898	-855.625	43.099
			33.286		34.518					
LIQ	1037.00	130.122	285.372	167.841	-1023.113	121.880	-1319.044	-1103.380	-855.625	43.099
	1100.00	130.122	293.047	174.794	-1014.915	130.078	-1337.267	-1102.022	-840.614	39.917
	1200.00	130.122	304.369	185.127	-1001.903	143.090	-1367.146	-1099.925	-816.943	35.561
	1300.00	130.122	314.784	194.706	-988.891	156.102	-1398.110	-1097.901	-793.444	31.881
	1400.00	130.122	324.427	203.631	-975.879	169.114	-1430.077	-1095.955	-770.098	28.733
	1500.00	130.122	333.405	211.987	-962.866	182.127	-1462.974	-1094.094	-746.888	26.009
	1600.00	130.122	341.803	219.841	-949.854	195.139	-1496.739	-1092.320	-723.799	23.630
	1700.00	130.122	349.691	227.250	-936.842	208.151	-1531.317	-1140.814	-700.372	21.520
	1800.00	130.122	357.129	234.261	-923.830	221.163	-1566.662	-1138.997	-674.516	19.574

References

Phase	H / S	C _p
SOL	Ja1	Ja1
LIQ	S5	S5

506.483

DILEAD ORTHOSILICATE

Pb₂SiO₄

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
SOL	298.15	136.920	186.263	186.263	-1363.520	0.000	-1419.054	-1363.520	-1252.483	219.430
	300.00	137.297	187.111	186.266	-1363.266	0.254	-1419.400	-1363.511	-1251.794	217.957
	400.00	151.993	228.783	191.849	-1348.747	14.773	-1440.260	-1362.518	-1214.679	158.621
	500.00	163.764	263.994	202.844	-1332.945	30.575	-1464.942	-1360.739	-1177.911	123.056
	600.00	173.357	294.740	215.651	-1316.067	47.453	-1492.911	-1358.349	-1141.561	99.382
	700.00	180.079	322.005	228.935	-1298.371	65.149	-1523.774	-1365.250	-1104.053	82.385
	800.00	184.213	346.346	242.118	-1280.138	83.382	-1557.214	-1362.235	-1066.942	69.664
	900.00	186.755	368.199	254.934	-1261.582	101.938	-1592.961	-1359.022	-1030.221	59.792
	1000.00	189.116	387.993	267.266	-1242.793	120.727	-1630.786	-1355.676	-993.866	51.914
	1016.00	189.586	390.998	269.191	-1239.764	123.756	-1637.018	-1355.126	-988.082	50.799
LIQ			52.712		53.555					
	1016.00	189.075	443.710	269.191	-1186.209	177.311	-1637.018	-1301.571	-988.082	50.799
	1100.00	189.075	458.729	283.099	-1170.326	193.194	-1674.928	-1298.730	-962.278	45.695
	1200.00	189.075	475.181	298.430	-1151.419	212.101	-1721.636	-1295.404	-931.839	40.562
	1300.00	189.075	490.315	312.616	-1132.511	231.009	-1769.921	-1292.148	-901.674	36.230
	1400.00	189.075	504.327	325.815	-1113.604	249.916	-1819.661	-1288.977	-871.757	32.526
	1500.00	189.075	517.372	338.156	-1094.696	268.824	-1870.754	-1285.904	-842.063	29.323
	1600.00	189.075	529.574	349.742	-1075.789	287.731	-1923.108	-1282.941	-812.571	26.528
	1700.00	189.075	541.037	360.661	-1056.881	306.639	-1976.644	-1330.271	-782.814	24.053
	1800.00	189.075	551.844	370.985	-1037.974	325.546	-2031.293	-1327.319	-750.696	21.785

References

Phase	H / S	C _p
SOL	Nb1	Ja1
LIQ	S5	S5

Pb4SiO6

TETRALEAD SILICATE

952.882

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	229.729	331.080	331.080	-1805.229	0.000	-1903.940	-1805.229	-1637.573	286.896
	300.00	230.125	332.502	331.084	-1804.804	0.425	-1904.554	-1805.202	-1636.533	284.946
	400.00	247.086	401.197	340.336	-1780.884	24.345	-1941.363	-1803.242	-1580.580	206.403
	500.00	259.634	457.728	358.325	-1755.527	49.702	-1984.391	-1800.592	-1525.210	159.338
	600.00	270.444	506.038	379.013	-1729.014	76.215	-2032.637	-1797.521	-1470.417	128.011
	700.00	280.435	548.484	400.250	-1701.465	103.764	-2085.404	-1813.462	-1412.979	105.438
	800.00	289.988	586.558	421.199	-1672.941	132.288	-2142.188	-1809.527	-1356.026	88.539
	900.00	299.287	621.253	441.527	-1643.476	161.753	-2202.604	-1804.782	-1299.615	75.428
	998.00	308.246	652.643	460.736	-1613.706	191.523	-2265.043	-1799.329	-1244.887	65.157
LIQ			108.583		108.366					
	998.00	308.361	761.226	460.736	-1505.340	299.889	-2265.043	-1690.963	-1244.887	65.157
	1000.00	308.361	761.843	461.338	-1504.723	300.506	-2266.567	-1690.843	-1243.993	64.980
	1100.00	308.361	791.233	490.013	-1473.887	331.342	-2344.244	-1684.884	-1199.597	56.964
	1200.00	308.361	818.064	516.249	-1443.051	362.178	-2424.728	-1678.963	-1155.742	50.308
	1300.00	308.361	842.746	540.428	-1412.215	393.014	-2507.785	-1673.105	-1112.378	44.696
	1400.00	308.361	865.598	562.848	-1381.379	423.850	-2593.216	-1667.345	-1069.462	39.902
	1500.00	308.361	886.873	583.749	-1350.543	454.686	-2680.852	-1661.713	-1026.953	35.762
	1600.00	308.361	906.774	603.323	-1319.707	485.522	-2770.545	-1656.232	-984.816	32.151
	1700.00	308.361	925.468	621.728	-1288.871	516.358	-2862.167	-1701.097	-942.569	28.962
	1800.00	308.361	943.094	639.097	-1258.035	547.194	-2955.603	-1695.735	-898.105	26.062

References

Phase	H / S	C _p	Remarks
SOL	M3	M3	M3 incongr. MPT= 998.
LIQ	S5	M3	

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	—(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
SOL-A	298.15	104.402	111.922	111.922	-1198.716	0.000	-1232.086	-1198.716	-1111.852	194.792
	300.00	104.686	112.569	111.924	-1198.523	0.193	-1232.293	-1198.700	-1111.313	193.497
	400.00	115.325	144.324	116.181	-1187.459	11.257	-1245.189	-1197.413	-1082.359	141.342
	500.00	121.210	170.741	124.528	-1175.609	23.107	-1260.980	-1195.665	-1053.792	110.089
	600.00	125.226	193.214	134.150	-1163.277	35.439	-1279.206	-1193.754	-1025.595	89.286
	700.00	128.358	212.761	144.014	-1150.593	48.123	-1299.526	-1196.644	-996.926	74.392
	763.00	130.074	223.896	150.156	-1142.452	56.264	-1313.285	-1195.407	-979.006	67.022
			7.402		5.648					
SOL-B	763.00	124.183	231.299	150.156	-1136.804	61.912	-1313.285	-1189.759	-979.006	67.022
	800.00	125.234	237.204	154.046	-1132.189	66.527	-1321.953	-1189.234	-968.798	63.256
	900.00	127.952	252.113	164.127	-1119.529	79.187	-1346.430	-1187.747	-941.332	54.633
	1000.00	130.545	265.729	173.616	-1106.603	92.113	-1372.332	-1186.164	-914.036	47.744
	1100.00	133.057	278.290	182.568	-1093.423	105.293	-1399.541	-1184.476	-886.904	42.116
	1200.00	135.513	289.973	191.038	-1079.994	118.722	-1427.961	-1186.674	-859.812	37.427
	1300.00	137.931	300.915	199.073	-1066.321	132.395	-1457.511	-1184.235	-832.671	33.457
	1400.00	140.320	311.225	206.719	-1052.408	146.308	-1488.123	-1181.654	-805.724	30.062
	1500.00	142.688	320.987	214.015	-1038.258	160.458	-1519.738	-1178.947	-778.966	27.126
	1559.00	144.077	326.518	218.168	-1029.798	168.918	-1538.840	-1177.296	-763.265	25.573

References

Phase	H / S	C _p	Remarks
SOL-A	Ku1	e	
SOL-B	Tk1	e	Tk1 MPT= 1559.

PbS

LEAD SULFIDE

239.266

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	49.436	91.343	91.343	-98.633	0.000	-125.867	-98.633	-96.994	16.993
	300.00	49.456	91.649	91.344	-98.542	0.091	-126.036	-98.633	-96.984	16.886
	400.00	50.467	106.016	93.296	-93.545	5.088	-135.951	-100.949	-96.334	12.580
	500.00	51.442	117.383	97.015	-88.449	10.184	-147.141	-102.568	-95.016	9.926
	600.00	52.402	126.847	101.220	-83.257	15.376	-159.365	-103.848	-93.376	8.129
	700.00	53.355	134.996	105.476	-77.969	20.664	-172.466	-109.690	-90.754	6.772
	800.00	54.305	142.183	109.624	-72.586	26.047	-186.332	-110.684	-87.982	5.745
	900.00	55.252	148.634	113.606	-67.108	31.525	-200.879	-164.398	-83.934	4.871
	1000.00	56.198	154.504	117.407	-61.536	37.097	-216.040	-163.615	-75.034	3.919
	1100.00	57.144	159.905	121.028	-55.869	42.764	-231.764	-162.714	-66.219	3.144
	1200.00	58.088	164.917	124.479	-50.107	48.526	-248.008	-161.693	-57.491	2.503
	1300.00	59.033	169.604	127.772	-44.251	54.382	-264.736	-160.563	-48.852	1.963
	1386.50	59.849	173.433	130.502	-39.109	59.524	-279.574	-159.506	-41.453	1.562
			13.581		18.830					
LIQ	1386.50	66.944	187.014	130.502	-20.279	78.354	-279.574	-140.676	-41.453	1.562
	1400.00	66.944	187.663	131.050	-19.375	79.258	-282.103	-140.410	-40.489	1.511
	1500.00	66.944	192.281	134.980	-12.681	85.952	-301.103	-138.443	-33.420	1.164
	1600.00	66.944	196.602	138.698	-5.987	92.646	-320.550	-136.489	-26.482	0.865
	1700.00	66.944	200.660	142.225	0.708	99.341	-340.415	-134.552	-19.666	0.604
	1800.00	66.944	204.487	145.578	7.402	106.035	-360.674	-132.636	-12.964	0.376
	1900.00	66.944	208.106	148.775	14.097	112.730	-381.305	-130.743	-6.367	0.175
	2000.00	66.944	211.540	151.828	20.791	119.424	-402.289	-128.873	0.131	-0.003

References

Phase	H / S	C _p	Remarks
SOL	Ke/Ja2	Ja1	
LIQ	Ja2	Ja1	DEC., NSPT= 1593. GAS (PbS)

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298 [————— kJ / mol —————]	G	ΔH _f	ΔG _f	log K _f [- -]
GAS	298.15	35.080	251.412	251.412	131.487	0.000	56.529	131.487	85.402	-14.962
	300.00	35.106	251.629	251.413	131.552	0.065	56.063	131.460	85.116	-14.820
	400.00	36.088	261.880	252.804	135.118	3.631	30.366	127.714	69.983	-9.139
	500.00	36.598	269.993	255.459	138.754	7.267	3.758	124.636	55.883	-5.838
	600.00	36.905	276.695	258.456	142.431	10.944	-23.586	121.839	42.402	-3.691
	700.00	37.110	282.400	261.479	146.132	14.645	-51.548	114.411	30.164	-2.251
	800.00	37.259	287.366	264.411	149.851	18.364	-80.042	111.753	18.309	-1.195
	900.00	37.375	291.761	267.211	153.583	22.096	-109.002	56.293	7.942	-0.461
	1000.00	37.469	295.704	269.866	157.325	25.838	-138.379	55.245	2.626	-0.137
	1100.00	37.550	299.279	272.380	161.076	29.589	-168.131	54.231	-2.586	0.123
	1200.00	37.621	302.550	274.760	164.835	33.348	-198.225	53.249	-7.708	0.336
	1300.00	37.685	305.563	277.015	168.600	37.113	-228.632	52.288	-12.748	0.512
	1400.00	37.745	308.358	279.155	172.372	40.885	-259.330	51.337	-17.716	0.661
	1500.00	37.800	310.964	281.190	176.149	44.662	-290.298	50.387	-22.615	0.788
	1600.00	37.853	313.406	283.128	179.931	48.444	-321.518	49.429	-27.450	0.896
	1700.00	37.903	315.702	284.977	183.719	52.232	-352.974	48.459	-32.226	0.990
	1800.00	37.952	317.870	286.745	187.512	56.025	-384.654	47.473	-36.944	1.072
	1900.00	37.999	319.923	288.438	191.310	59.823	-416.544	46.470	-41.606	1.144
	2000.00	38.045	321.873	290.061	195.112	63.625	-448.635	45.448	-46.215	1.207

References

Phase	H / S	C _p
GAS	Ja2,e	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL-A	298.15	86.420	148.490	148.490	-923.137	0.000	-967.409	-923.137	-816.207	142.996
	300.00	86.635	149.025	148.492	-922.977	0.160	-967.684	-923.177	-815.543	141.999
	400.00	98.751	175.590	152.032	-913.714	9.423	-983.950	-927.168	-779.286	101.764
	500.00	111.326	198.972	159.122	-903.212	19.925	-1002.698	-929.500	-742.049	77.521
	600.00	124.081	220.395	167.571	-891.443	31.694	-1023.680	-930.522	-704.438	61.327
	700.00	136.922	240.485	176.566	-878.393	44.744	-1046.733	-935.111	-665.966	49.695
	800.00	149.808	259.610	185.759	-864.057	59.080	-1071.745	-933.826	-627.592	40.978
	900.00	162.720	278.000	194.993	-848.431	74.706	-1098.630	-984.202	-588.292	34.144
	1000.00	175.649	295.813	204.188	-831.512	91.625	-1127.325	-978.998	-544.570	28.445
	1100.00	188.588	313.161	213.310	-813.301	109.836	-1157.777	-972.570	-501.428	23.811
	1139.00	193.637	319.819	216.843	-805.847	117.290	-1170.121	-969.727	-484.773	22.232
SOL-B			14.914		16.987					
	1139.00	194.000	334.733	216.843	-788.860	134.277	-1170.121	-952.740	-484.773	22.232
	1200.00	194.000	344.854	223.095	-777.026	146.111	-1190.851	-948.134	-459.832	20.016
	1300.00	194.000	360.382	233.066	-757.626	165.511	-1226.123	-940.626	-419.445	16.854
	1400.00	194.000	374.759	242.680	-738.226	184.911	-1262.889	-933.175	-379.634	14.164
LIQ	1443.00	194.000	380.628	246.704	-729.884	193.253	-1279.130	-929.990	-362.681	13.129
			27.835		40.166					
	1443.00	186.000	408.463	246.704	-689.718	233.419	-1279.130	-889.824	-362.681	13.129
	1500.00	186.000	415.669	252.988	-679.116	244.021	-1302.619	-886.075	-341.931	11.907
	1600.00	186.000	427.673	263.535	-660.516	262.621	-1344.793	-879.549	-305.868	9.986
	1700.00	186.000	438.949	273.525	-641.916	281.221	-1388.130	-873.091	-270.211	8.303
	1800.00	186.000	449.581	283.014	-623.316	299.821	-1432.561	-866.702	-234.932	6.818

References

Phase	H / S	C _p
SOL-A	Ke	Ke
SOL-B	Tk1	e
LIQ	Tk1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—————]
SOL	298.15	50.219	102.508	102.508	-99.998	0.000	-130.561	-99.998	-98.646	17.282
	300.00	50.237	102.819	102.509	-99.905	0.093	-130.751	-100.002	-98.637	17.174
	400.00	51.237	117.408	104.491	-94.831	5.167	-141.795	-100.326	-98.140	12.816
	500.00	52.237	128.949	108.268	-89.658	10.340	-154.132	-106.776	-97.450	10.181
	600.00	53.237	138.561	112.538	-84.384	15.614	-167.521	-107.913	-95.478	8.312
	700.00	54.237	146.843	116.860	-79.010	20.988	-181.800	-113.874	-92.520	6.904
	800.00	55.237	154.150	121.073	-73.536	26.462	-196.857	-114.932	-89.396	5.837
	900.00	56.237	160.714	125.119	-67.963	32.035	-212.605	-115.858	-86.147	5.000
	1000.00	57.237	166.691	128.982	-62.289	37.709	-228.980	-116.654	-82.802	4.325
	1100.00	58.237	172.193	132.663	-56.515	43.483	-245.928	-117.630	-74.429	3.534
	1200.00	59.237	177.303	136.173	-50.642	49.356	-263.406	-118.716	-65.723	2.861
	1300.00	60.237	182.084	139.523	-44.668	55.330	-281.378	-119.870	-57.099	2.294
	1359.00	60.827	184.771	141.429	-41.097	58.901	-292.200	-117.996	-52.050	2.001
			26.877		36.526					
LIQ	1359.00	62.760	211.648	141.429	-4.571	95.427	-292.200	-131.470	-52.050	2.001
	1400.00	62.760	213.513	143.513	-1.997	98.001	-300.916	-130.907	-49.662	1.853

References

Phase	H / S	C _p
SOL	Mi1	Mi1
LIQ	Pa3	e

PbSe[g]

LEAD SELENIDE (GAS)

286.160

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	36.228	263.614	263.614	126.357	0.000	47.761	126.357	79.676	-13.959
	300.00	36.243	263.838	263.614	126.424	0.067	47.273	126.327	79.386	-13.822
	400.00	36.751	274.344	265.043	130.077	3.720	20.340	124.582	63.994	-8.357
	500.00	36.987	282.573	267.756	133.766	7.409	-7.521	116.647	49.161	-5.136
	600.00	37.114	289.329	270.805	137.471	11.114	-36.126	113.942	35.916	-3.127
	700.00	37.191	295.057	273.871	141.187	14.830	-65.353	106.323	23.927	-1.785
	800.00	37.242	300.026	276.837	144.909	18.552	-95.112	103.513	12.348	-0.806
	900.00	37.276	304.415	279.662	148.635	22.278	-125.339	100.739	1.120	-0.065
	1000.00	37.300	308.343	282.337	152.363	26.006	-155.980	97.998	-9.802	0.512
	1100.00	37.319	311.899	284.865	156.094	29.737	-186.995	41.980	-15.497	0.736
	1200.00	37.332	315.147	287.256	159.827	33.470	-218.350	40.753	-20.667	0.900
	1300.00	37.343	318.136	289.518	163.561	37.204	-250.016	39.558	-25.737	1.034
	1400.00	37.352	320.904	291.662	167.296	40.939	-281.970	38.386	-30.716	1.146
	1500.00	37.358	323.481	293.698	171.031	44.674	-314.190	37.226	-35.611	1.240
	1600.00	37.364	325.892	295.636	174.767	48.410	-346.660	36.071	-40.429	1.320
	1700.00	37.369	328.157	297.483	178.504	52.147	-379.364	34.916	-45.175	1.388
	1800.00	37.373	330.293	299.247	182.241	55.884	-412.287	33.758	-49.853	1.447
	1900.00	37.376	332.314	300.935	185.978	59.621	-445.419	32.595	-54.466	1.497
	2000.00	37.379	334.231	302.552	189.716	63.359	-478.747	31.425	-59.018	1.541

References

Phase	H / S	C _p
GAS	Mi1	Mi1

PbSeO3

LEAD SELENITE

334.158

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	99.494	128.449	128.449	-538.016	0.000	-576.313	-538.016	-452.651	79.303
	300.00	99.579	129.065	128.451	-537.832	0.184	-576.551	-538.010	-452.121	78.721
	400.00	104.182	158.342	132.412	-527.644	10.372	-590.981	-537.677	-423.542	55.309
	500.00	108.784	182.084	140.043	-516.996	21.020	-608.037	-543.240	-394.963	41.261
	600.00	113.386	202.324	148.776	-505.887	32.129	-627.282	-543.282	-365.300	31.802
	700.00	117.989	220.149	157.723	-494.318	43.698	-648.422	-547.930	-334.851	24.987
	800.00	122.591	236.204	166.546	-482.289	55.727	-671.253	-547.438	-304.441	19.878
	900.00	127.194	250.909	175.114	-469.800	68.216	-695.618	-546.557	-274.115	15.909

References

Phase	H / S	C _p
SOL	Nb1/Ku1	e

350.158

LEAD SELENATE

PbSeO4

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	104.023	167.799	167.799	-609.617	0.000	-659.646	-609.617	-505.402	88.544
	300.00	104.215	168.443	167.801	-609.424	0.193	-659.957	-609.630	-504.756	87.886
	400.00	114.616	199.849	172.013	-598.483	11.134	-678.422	-610.029	-469.722	61.339
	500.00	125.018	226.542	180.310	-586.501	23.116	-699.772	-615.788	-434.566	45.399
	600.00	135.419	250.255	190.025	-573.479	36.138	-723.632	-615.497	-398.337	34.678
	700.00	145.821	271.911	200.197	-559.417	50.200	-749.755	-619.278	-361.420	26.970
	800.00	156.222	292.062	210.434	-544.315	65.302	-777.964	-617.381	-324.702	21.201
	900.00	166.624	311.062	220.569	-528.173	81.444	-808.129	-614.550	-288.277	16.731

References

Phase	H / S	C _p
SOL	Nb1	e

334.800

LEAD TELLURIDE

PbTe

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	50.551	110.039	110.039	-68.618	0.000	-101.426	-68.618	-67.353	11.800
	300.00	50.572	110.352	110.040	-68.524	0.094	-101.630	-68.622	-67.345	11.726
	400.00	51.698	125.055	112.037	-63.411	5.207	-113.433	-68.924	-66.879	8.734
	500.00	52.823	136.712	115.846	-58.185	10.433	-126.541	-69.417	-66.315	6.928
	600.00	53.948	146.442	120.156	-52.846	15.772	-140.712	-70.103	-65.634	5.714
	700.00	55.074	154.843	124.524	-47.395	21.223	-155.785	-75.819	-64.026	4.778
	800.00	56.199	162.270	128.787	-41.832	26.786	-171.648	-94.463	-60.392	3.943
	900.00	57.325	168.955	132.885	-36.155	32.463	-188.214	-95.538	-56.067	3.254
	1000.00	58.450	175.053	136.801	-30.367	38.251	-205.419	-96.470	-51.630	2.697
	1100.00	59.576	180.676	140.537	-24.465	44.153	-223.209	-97.258	-47.107	2.237
LIQ	1197.00	60.668	185.756	143.998	-18.633	49.985	-240.984	-97.884	-42.656	1.861
			47.887		57.321					
	1197.00	62.760	233.644	143.998	38.688	107.306	-240.984	-40.563	-40.563	1.861
	1200.00	62.760	233.801	144.223	38.876	107.494	-241.685	-40.574	-42.662	1.857
	1300.00	62.760	238.824	151.309	45.152	113.770	-265.320	-40.936	-42.821	1.721
	1400.00	62.760	243.475	157.728	51.428	120.046	-289.437	-87.728	-40.461	1.510
	1500.00	62.760	247.805	163.591	57.704	126.322	-314.004	-86.507	-37.128	1.293
	1600.00	62.760	251.856	168.982	63.980	132.598	-338.989	-85.287	-33.876	1.106
	1700.00	62.760	255.660	173.970	70.256	138.874	-364.367	-84.076	-30.700	0.943

References

Phase	H / S	C _p
SOL	Mi1	Mi1
LIQ	Mi1	e

PbTe[g]

LEAD TELLURIDE (GAS)

334.800

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			kJ / mol			[—————]		[-
GAS	298.15	36.746	271.672	271.672	155.226	0.000	74.227	155.226	108.300	-18.974
	300.00	36.754	271.899	271.673	155.294	0.068	73.724	155.197	108.009	-18.806
	400.00	37.039	282.518	273.119	158.986	3.760	45.979	153.472	92.532	-12.083
	500.00	37.171	290.798	275.857	162.697	7.471	17.298	151.465	77.523	-8.099
	600.00	37.242	297.582	278.929	166.418	11.192	-12.132	149.162	62.946	-5.480
	700.00	37.285	303.327	282.015	170.144	14.918	-42.184	141.721	49.575	-3.699
	800.00	37.313	308.308	284.997	173.874	18.648	-72.772	121.243	38.484	-2.513
	900.00	37.333	312.704	287.836	177.607	22.381	-103.826	118.224	28.321	-1.644
	1000.00	37.346	316.638	290.523	181.341	26.115	-135.297	115.237	18.492	-0.966
	1100.00	37.357	320.198	293.061	185.076	29.850	-167.142	112.284	8.961	-0.426
	1200.00	37.364	323.449	295.460	188.812	33.586	-199.326	109.362	-0.303	0.013
	1300.00	37.370	326.440	297.730	192.549	37.323	-231.823	106.461	-9.324	0.375
	1400.00	37.375	329.209	299.881	196.286	41.060	-264.607	57.130	-15.631	0.583
	1500.00	37.379	331.788	301.923	200.024	44.798	-297.658	55.812	-20.782	0.724
	1600.00	37.382	334.200	303.865	203.762	48.536	-330.959	54.495	-25.845	0.844
	1700.00	37.385	336.467	305.717	207.500	52.274	-364.493	53.169	-30.826	0.947
	1800.00	37.387	338.604	307.485	211.239	56.013	-398.248	51.831	-35.728	1.037
	1900.00	37.389	340.625	309.177	214.978	59.752	-432.210	50.484	-40.556	1.115
	2000.00	37.390	342.543	310.798	218.716	63.490	-466.369	49.128	-45.312	1.183

References

Phase	H / S	C _p
GAS	Mi1	Mi1

PbWO4

LEAD TUNGSTATE

455.048

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					
SOL	298.15	119.870	168.197	168.197	-1121.730	0.000	-1171.878	-1121.730	-1020.495	178.787
	300.00	120.206	168.939	168.199	-1121.508	0.222	-1172.190	-1121.711	-1019.867	177.575
	400.00	133.020	205.480	173.094	-1108.776	12.954	-1190.968	-1120.117	-986.132	128.776
	500.00	140.510	236.024	182.711	-1095.074	26.656	-1213.086	-1117.861	-952.889	99.548
	600.00	145.905	262.139	193.826	-1080.742	40.988	-1238.025	-1115.302	-920.131	80.105
	700.00	150.311	284.971	205.249	-1065.925	55.805	-1265.405	-1117.415	-887.020	66.190
	800.00	154.189	305.299	216.508	-1050.697	71.033	-1294.936	-1114.523	-854.301	55.780
	900.00	157.760	323.669	227.410	-1035.097	86.633	-1326.399	-1111.409	-821.958	47.705
	1000.00	161.141	340.467	237.888	-1019.151	102.579	-1359.618	-1108.075	-789.973	41.264
	1100.00	164.398	355.979	247.927	-1002.873	118.857	-1394.450	-1104.518	-758.333	36.010
	1200.00	167.570	370.420	257.540	-986.274	135.456	-1430.778	-1100.733	-727.027	31.647
	1300.00	170.682	383.956	266.749	-969.361	152.369	-1468.504	-1096.729	-696.046	27.967
	1398.00	173.690	396.469	275.408	-952.487	169.243	-1506.750	-1092.599	-665.991	24.884

References

Phase	H / S	C _p	Remarks
SOL	Tk1	Nb1,e	Tk1 TPT= 1150. / MPT= 1398.

106.420

PALLADIUM

Pd

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [—]
SOL	298.15	25.982	37.823	37.823	0.000	0.000	-11.277	0.000	0.000	0.000
	300.00	25.996	37.984	37.824	0.048	0.048	-11.347	0.000	0.000	0.000
	400.00	26.735	45.564	38.852	2.685	2.685	-15.541	0.000	0.000	0.000
	500.00	27.238	51.580	40.817	5.382	5.382	-20.408	0.000	0.000	0.000
	600.00	27.771	56.593	43.040	8.132	8.132	-25.824	0.000	0.000	0.000
	700.00	28.304	60.914	45.292	10.936	10.936	-31.704	0.000	0.000	0.000
	800.00	28.837	64.729	47.487	13.793	13.793	-37.990	0.000	0.000	0.000
	900.00	29.370	68.156	49.597	16.703	16.703	-44.637	0.000	0.000	0.000
	1000.00	29.903	71.278	51.611	19.667	19.667	-51.611	0.000	0.000	0.000
	1100.00	30.436	74.153	53.531	22.684	22.684	-58.884	0.000	0.000	0.000
	1200.00	30.969	76.824	55.362	25.754	25.754	-66.435	0.000	0.000	0.000
	1300.00	31.502	79.324	57.110	28.878	28.878	-74.243	0.000	0.000	0.000
	1400.00	32.035	81.678	58.782	32.055	32.055	-82.295	0.000	0.000	0.000
	1500.00	32.643	83.909	60.383	35.288	35.288	-90.575	0.000	0.000	0.000
	1600.00	33.397	86.039	61.921	38.589	38.589	-99.073	0.000	0.000	0.000
	1700.00	34.281	88.089	63.400	41.972	41.972	-107.780	0.000	0.000	0.000
	1800.00	35.268	90.076	64.827	45.449	45.449	-116.689	0.000	0.000	0.000
	1825.00	35.528	90.565	65.176	46.334	46.334	-118.947	0.000	0.000	0.000
			9.622		17.560					
LIQ	1825.00	34.727	100.186	65.176	63.894	63.894	-118.947	0.000	0.000	0.000
	1900.00	34.727	101.585	66.586	66.498	66.498	-126.513	0.000	0.000	0.000
	2000.00	34.727	103.366	68.381	69.971	69.971	-136.762	0.000	0.000	0.000
	2100.00	34.727	105.061	70.088	73.443	73.443	-147.184	0.000	0.000	0.000
	2200.00	34.727	106.676	71.714	76.916	76.916	-157.771	0.000	0.000	0.000
	2300.00	34.727	108.220	73.268	80.389	80.389	-168.517	0.000	0.000	0.000
	2400.00	34.727	109.698	74.755	83.862	83.862	-179.413	0.000	0.000	0.000
	2500.00	34.727	111.115	76.182	87.334	87.334	-190.454	0.000	0.000	0.000
	2600.00	34.727	112.477	77.552	90.807	90.807	-201.634	0.000	0.000	0.000
	2700.00	34.727	113.788	78.870	94.280	94.280	-212.948	0.000	0.000	0.000
	2800.00	34.727	115.051	80.139	97.753	97.753	-224.390	0.000	0.000	0.000
	2900.00	34.727	116.270	81.364	101.225	101.225	-235.957	0.000	0.000	0.000
	3000.00	34.727	117.447	82.548	104.698	104.698	-247.643	0.000	0.000	0.000
	3100.00	34.727	118.586	83.692	108.171	108.171	-259.445	0.000	0.000	0.000
	3200.00	34.727	119.688	84.800	111.643	111.643	-271.359	0.000	0.000	0.000
	3234.00	34.727	120.055	85.168	112.824	112.824	-275.434	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL	Hu1	Hu1	
LIQ	Hu1	Hu1	BPT= 3234., L= 357.55 kJ

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	20.786	167.059	167.059	376.560	0.000	326.751	376.560	338.028	-59.221
	300.00	20.786	167.188	167.060	376.598	0.038	326.442	376.550	337.789	-58.814
	400.00	20.786	173.168	167.875	378.677	2.117	309.410	375.992	324.951	-42.434
	500.00	20.786	177.806	169.415	380.756	4.196	291.853	375.374	312.261	-32.622
	600.00	20.757	181.587	171.138	382.829	6.269	273.877	374.697	299.701	-26.091
	700.00	20.837	184.794	172.865	384.910	8.350	255.554	373.974	287.258	-21.435
	800.00	20.876	187.579	174.534	386.995	10.435	236.933	373.202	274.922	-17.951
	900.00	20.976	190.042	176.123	389.087	12.527	218.049	372.384	262.686	-15.246
	1000.00	21.241	192.264	177.628	391.196	14.636	198.932	371.529	250.543	-13.087
	1100.00	21.741	194.310	179.053	393.343	16.783	179.602	370.659	238.486	-11.325
	1200.00	22.512	196.233	180.405	395.553	18.993	160.074	369.799	226.509	-9.860
	1300.00	23.560	198.074	181.694	397.855	21.295	140.358	368.977	214.602	-8.623
	1400.00	24.874	199.866	182.928	400.274	23.714	120.461	368.220	202.756	-7.565
	1500.00	26.429	201.634	184.116	402.837	26.277	100.386	367.549	190.961	-6.650
	1600.00	28.191	203.395	185.266	405.567	29.007	80.134	366.978	179.207	-5.851
	1700.00	30.119	205.161	186.384	408.481	31.921	59.707	366.509	167.487	-5.146
	1800.00	32.165	206.940	187.477	411.595	35.035	39.102	366.146	155.790	-4.521
	1900.00	34.148	208.733	188.548	414.911	38.351	18.318	348.413	144.832	-3.982
	2000.00	36.097	210.535	189.603	418.424	41.864	-2.645	348.453	134.117	-3.503
	2100.00	37.918	212.341	190.642	422.126	45.566	-23.789	348.683	123.395	-3.069
	2200.00	39.526	214.143	191.670	426.001	49.441	-45.113	349.084	112.658	-2.675
	2300.00	40.883	215.931	192.686	430.023	53.463	-66.617	349.634	101.900	-2.314
	2400.00	41.974	217.695	193.691	434.168	57.608	-88.299	350.307	91.115	-1.983
	2500.00	42.803	219.426	194.686	438.409	61.849	-110.155	351.075	80.299	-1.678
	2600.00	43.383	221.117	195.670	442.721	66.161	-132.182	351.914	69.452	-1.395
	2700.00	43.731	222.761	196.643	447.078	70.518	-154.377	352.798	58.571	-1.133
	2800.00	43.869	224.355	197.605	451.460	74.900	-176.733	353.707	47.658	-0.889
	2900.00	43.819	225.894	198.554	455.846	79.286	-199.246	354.621	36.711	-0.661
	3000.00	43.601	227.376	199.490	460.218	83.658	-221.910	355.520	25.733	-0.448
	3100.00	43.236	228.800	200.413	464.561	88.001	-244.719	356.390	14.726	-0.248
	3200.00	42.746	230.165	201.321	468.861	92.301	-267.668	357.218	3.691	-0.060
	3300.00	42.148	231.472	202.215	473.107	96.547	-290.750	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

177.325

PALLADIUM CHLORIDE

PdCl2

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					
SOL	298.15	75.273	104.182	104.182	-198.698	0.000	-229.760	-198.698	-151.960	26.623
	300.00	75.312	104.647	104.183	-198.559	0.139	-229.953	-198.670	-151.671	26.408
	400.00	77.404	126.600	107.162	-190.923	7.775	-241.563	-197.137	-136.235	17.790
	500.00	79.496	144.097	112.857	-183.078	15.620	-255.126	-195.561	-121.190	12.661
	600.00	81.588	158.775	119.318	-175.024	23.674	-270.289	-193.892	-106.471	9.269
	700.00	83.680	171.509	125.884	-166.760	31.938	-286.817	-192.109	-92.040	6.868
	800.00	85.772	182.820	132.307	-158.288	40.410	-304.544	-190.199	-77.874	5.085
	900.00	87.864	193.043	138.496	-149.606	49.092	-323.345	-188.153	-63.954	3.712
	952.00	88.952	198.009	141.612	-145.009	53.689	-333.513	-187.034	-56.810	3.117
			19.338		18.410					
LIQ	952.00	94.140	217.347	141.612	-126.599	72.099	-333.513	-168.624	-56.810	3.117
	1000.00	94.140	221.978	145.360	-122.080	76.618	-344.058	-167.332	-51.205	2.675
	1100.00	94.140	230.950	152.739	-112.666	86.032	-366.711	-164.689	-39.720	1.886
	1200.00	94.140	239.142	159.603	-103.252	95.446	-390.222	-162.109	-28.474	1.239
	1300.00	94.140	246.677	166.015	-93.838	104.860	-414.518	-159.591	-17.440	0.701
	1400.00	94.140	253.653	172.029	-84.424	114.274	-439.539	-157.135	-6.598	0.246
	1500.00	94.140	260.148	177.690	-75.010	123.688	-465.232	-154.744	4.071	-0.142
	1600.00	94.140	266.224	183.035	-65.596	133.102	-491.554	-152.426	14.582	-0.476

References

Phase	H / S	C _p
SOL	Nb1/Be1,e	e
LIQ	Be1	e

144.417

PALLADIUM FLUORIDE

PdF2

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					
SOL	298.15	65.944	88.701	88.701	-468.608	0.000	-495.054	-468.608	-423.314	74.163
	300.00	65.982	89.109	88.702	-468.486	0.122	-495.219	-468.592	-423.033	73.657
	400.00	68.032	108.371	91.315	-461.785	6.823	-505.134	-467.741	-407.975	53.276
	500.00	70.082	123.772	96.316	-454.880	13.728	-516.766	-466.896	-393.131	41.070
	600.00	72.132	136.731	101.999	-447.769	20.839	-529.808	-466.009	-378.461	32.948
	700.00	74.182	148.004	107.783	-440.453	28.155	-544.056	-465.047	-363.944	27.158
	800.00	76.232	158.044	113.449	-432.932	35.676	-559.367	-463.989	-349.572	22.825
	900.00	78.283	167.141	118.917	-425.207	43.401	-575.634	-462.822	-335.339	19.463
	1000.00	80.333	175.495	124.163	-417.276	51.332	-592.771	-461.535	-321.242	16.780
	1100.00	82.383	183.248	129.186	-409.140	59.468	-610.713	-460.122	-307.280	14.591

References

Phase	H / S	C _p
SOL	Ku1/e	e

PdI2

PALLADIUM IODIDE

360.229

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [————— kJ / mol —————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL-A	298.15	75.060	179.996	179.996	-63.220	0.000	-116.886	-63.220	-70.981	12.436
	300.00	75.103	180.460	179.997	-63.081	0.139	-117.219	-63.230	-71.029	12.367
	400.00	77.404	202.381	182.970	-55.456	7.764	-136.408	-79.880	-72.981	9.530
	500.00	79.705	219.900	188.661	-47.600	15.620	-157.551	-122.915	-67.118	7.012
	600.00	82.006	234.636	195.127	-39.515	23.705	-180.296	-121.331	-56.105	4.884
	700.00	84.308	247.450	201.706	-31.199	32.021	-204.414	-119.582	-45.370	3.386
	800.00	86.609	258.858	208.149	-22.653	40.567	-229.740	-117.665	-34.897	2.279
	833.00	87.368	262.374	210.228	-19.783	43.437	-238.340	-116.996	-31.496	1.975
SOL-B			0.000	0.000						
	833.00	87.368	262.374	210.228	-19.783	43.437	-238.340	-116.996	-31.496	1.975
	900.00	88.910	269.192	214.367	-13.877	49.343	-256.150	-115.580	-24.674	1.432

References

Phase	H / S	C _p
SOL-A	Nb1	e
SOL-B	u	e

PdO

PALLADIUM OXIDE

122.419

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [————— kJ / mol —————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	31.381	38.911	38.911	-115.478	0.000	-127.079	-115.478	-85.220	14.930
	300.00	31.445	39.106	38.912	-115.420	0.058	-127.152	-115.495	-85.032	14.805
	400.00	34.911	48.626	40.187	-112.102	3.376	-131.553	-116.299	-74.750	9.761
	500.00	38.378	56.789	42.708	-108.438	7.040	-136.832	-116.862	-64.293	6.717
	600.00	41.844	64.092	45.673	-104.427	11.051	-142.882	-117.181	-53.745	4.679
	700.00	45.311	70.803	48.790	-100.069	15.409	-149.631	-117.254	-43.163	3.221
	800.00	48.777	77.080	51.938	-95.364	20.114	-157.028	-117.075	-32.588	2.128
	900.00	52.244	83.025	55.064	-90.313	25.165	-165.036	-116.637	-22.051	1.280
	1000.00	55.710	88.709	58.147	-84.916	30.562	-173.625	-115.934	-11.576	0.605
	1100.00	59.176	94.181	61.175	-79.171	36.307	-182.771	-114.961	-1.185	0.056
	1200.00	62.643	99.479	64.147	-73.080	42.398	-192.455	-113.715	9.105	-0.396

References

Phase	H / S	C _p
SOL	Tk1,Be5	Be5,e

138.486

PALLADIUM SULFIDE

PdS

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	43.406	56.484	56.484	-70.710	0.000	-87.551	-70.710	-66.716	11.688
	300.00	43.480	56.753	56.485	-70.630	0.080	-87.655	-70.720	-66.691	11.612
	400.00	46.684	69.730	58.233	-66.111	4.599	-94.003	-73.419	-65.185	8.512
	500.00	49.091	80.415	61.631	-61.318	9.392	-101.526	-75.226	-62.936	6.575
	600.00	51.184	89.553	65.541	-56.303	14.407	-110.035	-76.537	-60.344	5.253
	700.00	53.129	97.591	69.557	-51.086	19.624	-119.400	-77.433	-57.572	4.296
	800.00	54.994	104.807	73.520	-45.680	25.030	-129.526	-78.244	-54.679	3.570
	900.00	56.814	111.390	77.367	-40.089	30.621	-140.340	-131.770	-50.535	2.933
	1000.00	58.605	117.469	81.077	-34.318	36.392	-151.787	-130.797	-41.560	2.171
	1100.00	60.378	123.138	84.646	-28.369	42.341	-163.820	-129.707	-32.688	1.552
	1200.00	62.138	128.467	88.078	-22.243	48.467	-176.403	-128.500	-23.921	1.041
	1243.00	62.892	130.668	89.513	-19.555	51.155	-181.975	-127.945	-20.183	0.848

References

Phase	H / S	C _p	Remarks
SOL	Mi1	Mi1	Tk1 MPT= 1243.

170.552

PALLADIUM DISULFIDE

PdS₂

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	65.889	87.864	87.864	-78.241	0.000	-104.438	-78.241	-74.046	12.972
	300.00	66.009	88.272	87.865	-78.119	0.122	-104.601	-78.251	-74.020	12.888
	400.00	70.780	107.981	90.520	-71.257	6.984	-114.449	-83.188	-72.353	9.448
	500.00	73.835	124.121	95.675	-64.018	14.223	-126.078	-86.451	-69.308	7.241
	600.00	76.215	137.800	101.584	-56.512	21.729	-139.192	-88.847	-65.635	5.714
	700.00	78.277	149.706	107.627	-48.785	29.456	-153.580	-90.543	-61.628	4.599
	800.00	80.168	160.284	113.560	-40.862	37.379	-169.089	-92.197	-57.386	3.747
	900.00	81.961	169.830	119.290	-32.755	45.486	-185.602	-199.413	-50.629	2.938
	1000.00	83.693	178.556	124.787	-24.472	53.769	-203.028	-197.764	-34.185	1.786
	1100.00	85.384	186.612	130.046	-16.018	62.223	-221.291	-196.011	-17.911	0.851
	1200.00	87.048	194.113	135.075	-7.396	70.845	-240.332	-194.157	-1.801	0.078
	1245.00	87.790	197.331	137.268	-3.462	74.779	-249.139	-193.289	5.396	-0.226

References

Phase	H / S	C _p	Remarks
SOL	Mi1	Mi1	Mi1 MPT= 1245.

Pd4S

TETRAPALLADIUM SULFIDE

457.746

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
SOL	298.15	114.961	180.665	180.665	-69.036	0.000	-122.901	-69.036	-68.236	11.955
	300.00	115.052	181.377	180.667	-68.823	0.213	-123.236	-69.058	-68.231	11.880
	400.00	119.930	215.143	185.238	-57.074	11.962	-143.131	-72.436	-67.690	8.839
	500.00	124.809	242.429	194.031	-44.837	24.199	-166.052	-74.890	-66.237	6.920
	600.00	129.687	265.615	204.076	-32.112	36.924	-191.482	-76.743	-64.320	5.600
	700.00	134.566	285.973	214.350	-18.900	50.136	-219.081	-78.055	-62.141	4.637
	800.00	139.444	304.260	224.464	-5.199	63.837	-248.607	-79.142	-59.792	3.904
	900.00	144.323	320.966	234.271	8.989	78.025	-279.880	-132.802	-56.165	3.260
	1000.00	149.201	336.424	243.723	23.665	92.701	-312.759	-131.815	-47.700	2.492
	1100.00	154.080	350.874	252.814	38.829	107.865	-347.132	-130.561	-39.347	1.868

References

Phase	H / S	C _p	Remarks
SOL	Mi1	Mi1	Tk1 DPT= 1034. (LIQ + Pd)

PdTe

PALLADIUM TELLURIDE

234.020

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
SOL	298.15	51.301	89.621	89.621	-37.656	0.000	-64.377	-37.656	-38.342	6.717
	300.00	51.325	89.939	89.622	-37.561	0.095	-64.543	-37.657	-38.346	6.677
	400.00	52.618	104.881	91.651	-32.364	5.292	-74.316	-37.781	-38.562	5.036
	500.00	53.911	116.761	95.524	-27.037	10.619	-85.418	-38.058	-38.728	4.046
	600.00	55.204	126.705	99.914	-21.582	16.074	-97.605	-38.480	-38.825	3.380
	700.00	56.497	135.312	104.370	-15.997	21.659	-110.715	-39.047	-38.840	2.898
	800.00	57.789	142.940	108.723	-10.282	27.374	-124.634	-57.380	-36.883	2.408
	900.00	59.082	149.821	112.913	-4.439	33.217	-139.278	-58.213	-34.270	1.989
	993.00	60.285	155.689	116.648	1.112	38.768	-153.488	-58.919	-31.760	1.671

References

Phase	H / S	C _p	Remarks
SOL	Mi1	Mi1	Tk1 MPT= 993.

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-A	298.15	27.475	73.931	73.931	0.000	0.000	-22.043	0.000	0.000	0.000
	300.00	27.478	74.101	73.932	0.051	0.051	-22.180	0.000	0.000	0.000
	400.00	28.300	82.093	75.016	2.831	2.831	-30.006	0.000	0.000	0.000
	500.00	29.791	88.561	77.097	5.732	5.732	-38.548	0.000	0.000	0.000
	600.00	31.546	94.145	79.482	8.798	8.798	-47.689	0.000	0.000	0.000
	700.00	33.424	99.148	81.940	12.045	12.045	-57.358	0.000	0.000	0.000
	800.00	35.659	103.752	84.382	15.496	15.496	-67.506	0.000	0.000	0.000
	900.00	37.969	108.085	86.777	19.177	19.177	-78.100	0.000	0.000	0.000
	1000.00	40.279	112.205	89.116	23.090	23.090	-89.116	0.000	0.000	0.000
	1068.00	41.850	114.906	90.672	25.882	25.882	-96.838	0.000	0.000	0.000
SOL-B			2.965		3.167					
	1068.00	38.451	117.872	90.672	29.049	29.049	-96.838	0.000	0.000	0.000
	1100.00	38.451	119.007	91.480	30.280	30.280	-100.628	0.000	0.000	0.000
	1200.00	38.451	122.353	93.915	34.125	34.125	-112.698	0.000	0.000	0.000
	1204.00	38.451	122.481	94.010	34.278	34.278	-113.188	0.000	0.000	0.000
LIQ			5.720		6.887					
	1204.00	42.970	128.201	94.010	41.165	41.165	-113.188	0.000	0.000	0.000
	1300.00	42.970	131.497	96.658	45.291	45.291	-125.656	0.000	0.000	0.000
	1400.00	42.970	134.681	99.262	49.588	49.588	-138.967	0.000	0.000	0.000
	1500.00	42.970	137.646	101.723	53.884	53.884	-152.585	0.000	0.000	0.000
	1600.00	42.970	140.419	104.056	58.181	58.181	-166.489	0.000	0.000	0.000
	1700.00	42.970	143.024	106.272	62.478	62.478	-180.663	0.000	0.000	0.000
	1800.00	42.970	145.480	108.383	66.775	66.775	-195.089	0.000	0.000	0.000
	1900.00	42.970	147.804	110.397	71.072	71.072	-209.754	0.000	0.000	0.000
	2000.00	42.970	150.008	112.323	75.369	75.369	-224.646	0.000	0.000	0.000
	2100.00	42.970	152.104	114.168	79.666	79.666	-239.752	0.000	0.000	0.000
	2200.00	42.970	154.103	115.938	83.963	83.963	-255.064	0.000	0.000	0.000
	2300.00	42.970	156.013	117.639	88.260	88.260	-270.570	0.000	0.000	0.000
	2400.00	42.970	157.842	119.276	92.557	92.557	-286.263	0.000	0.000	0.000
	2500.00	42.970	159.596	120.854	96.854	96.854	-302.136	0.000	0.000	0.000
	2600.00	42.970	161.281	122.377	101.151	101.151	-318.180	0.000	0.000	0.000
	2700.00	42.970	162.903	123.848	105.448	105.448	-334.390	0.000	0.000	0.000
	2800.00	42.970	164.466	125.271	109.745	109.745	-350.759	0.000	0.000	0.000
	2900.00	42.970	165.974	126.649	114.042	114.042	-367.281	0.000	0.000	0.000
	3000.00	42.970	167.430	127.984	118.339	118.339	-383.952	0.000	0.000	0.000
	3100.00	42.970	168.839	129.279	122.636	122.636	-400.766	0.000	0.000	0.000
	3200.00	42.970	170.204	130.537	126.933	126.933	-417.718	0.000	0.000	0.000
	3300.00	42.970	171.526	131.759	131.230	131.230	-434.805	0.000	0.000	0.000
	3400.00	42.970	172.809	132.948	135.527	135.527	-452.022	0.000	0.000	0.000
	3500.00	42.970	174.054	134.104	139.824	139.824	-469.366	0.000	0.000	0.000
	3600.00	42.970	175.265	135.231	144.121	144.121	-486.832	0.000	0.000	0.000
	3700.00	42.970	176.442	136.329	148.418	148.418	-504.418	0.000	0.000	0.000
	3780.00	42.970	177.361	137.188	151.855	151.855	-518.570	0.000	0.000	0.000

References			
Phase	H / S	C _p	Remarks
SOL-A	Hu1	Hu1	
SOL-B	Hu1	Hu1	
LIQ	Hu1	Hu1	Hu1 BPT= 3780., L= 296.78 kJ

Pr[g]

PRASEODYMIUM (GAS)

140.908

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	21.379	189.808	189.808	355.640	0.000	299.049	355.640	321.091	-56.254
	300.00	21.388	189.940	189.808	355.680	0.040	298.698	355.629	320.877	-55.870
	400.00	22.527	196.229	190.658	357.868	2.228	279.377	355.038	309.383	-40.401
	500.00	23.896	201.405	192.304	360.191	4.551	259.488	354.458	298.036	-31.136
	600.00	25.079	205.869	194.201	362.641	7.001	239.119	353.843	286.809	-24.969
	700.00	26.051	209.811	196.155	365.199	9.559	218.332	353.154	275.690	-20.572
	800.00	26.831	213.343	198.086	367.845	12.205	197.171	352.349	264.676	-17.282
	900.00	27.439	216.540	199.962	370.560	14.920	175.674	351.383	253.774	-14.729
	1000.00	27.891	219.455	201.768	373.328	17.688	153.872	350.238	242.988	-12.692
	1100.00	28.195	222.129	203.499	376.133	20.493	131.791	345.854	232.419	-11.037
	1200.00	28.360	224.590	205.155	378.962	23.322	109.454	344.837	222.152	-9.670
	1300.00	28.389	226.862	206.739	381.801	26.161	86.879	336.510	212.535	-8.540
	1400.00	28.392	228.967	208.252	384.640	29.000	64.087	335.053	203.053	-7.576
	1500.00	28.315	230.924	209.699	387.476	31.836	41.091	333.592	193.675	-6.744
	1600.00	28.196	232.747	211.084	390.302	34.662	17.906	332.121	184.396	-6.020
	1700.00	28.055	234.453	212.409	393.115	37.475	-5.455	330.636	175.208	-5.383
	1800.00	27.905	236.052	213.678	395.913	40.273	-28.981	329.137	166.109	-4.820
	1900.00	27.753	237.557	214.896	398.696	43.056	-52.662	327.623	157.093	-4.319
	2000.00	27.604	238.976	216.065	401.463	45.823	-76.489	326.094	148.157	-3.869
	2100.00	27.461	240.320	217.188	404.217	48.577	-100.455	324.550	139.298	-3.465
	2200.00	27.323	241.594	218.269	406.956	51.316	-124.551	322.993	130.513	-3.099
	2300.00	27.192	242.806	219.309	409.681	54.041	-148.771	321.421	121.799	-2.766
	2400.00	27.067	243.960	220.313	412.394	56.754	-173.110	319.837	113.153	-2.463
	2500.00	26.949	245.063	221.281	415.095	59.455	-197.562	318.241	104.574	-2.185
	2600.00	26.836	246.117	222.216	417.784	62.144	-222.121	316.633	96.059	-1.930
	2700.00	26.729	247.128	223.120	420.462	64.822	-246.784	315.014	87.607	-1.695
	2800.00	26.627	248.098	223.995	423.130	67.490	-271.545	313.385	79.214	-1.478
	2900.00	26.529	249.031	224.842	425.788	70.148	-296.402	311.746	70.879	-1.277
	3000.00	26.435	249.929	225.663	428.436	72.796	-321.350	310.097	62.602	-1.090
	3100.00	26.344	250.794	226.460	431.075	75.435	-346.387	308.439	54.379	-0.916
	3200.00	26.257	251.629	227.234	433.705	78.065	-371.508	306.772	46.210	-0.754
	3300.00	26.172	252.436	227.985	436.326	80.686	-396.712	305.097	38.094	-0.603
	3400.00	26.090	253.216	228.716	438.939	83.299	-421.994	303.413	30.028	-0.461
	3500.00	26.009	253.971	229.427	441.544	85.904	-447.354	301.721	22.012	-0.329
	3600.00	25.930	254.703	230.119	444.141	88.501	-472.788	300.021	14.044	-0.204
	3700.00	25.853	255.412	230.793	446.731	91.091	-498.294	298.313	6.124	-0.086
	3800.00	25.777	256.100	231.450	449.312	93.672	-523.869	0.000	0.000	0.000
	3900.00	25.702	256.769	232.091	451.886	96.246	-549.513	0.000	0.000	0.000
	4000.00	25.627	257.419	232.716	454.452	98.812	-575.223	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H ₂₉₈)/T [—————]	H [—————]	H–H ₂₉₈ kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	101.679	192.464	192.464	–891.192	0.000	–948.575	–891.192	–858.461	150.399
	300.00	101.787	193.093	192.466	–891.004	0.188	–948.932	–891.265	–858.257	149.436
	400.00	106.612	223.077	196.521	–880.570	10.622	–969.801	–935.334	–838.069	109.441
	500.00	110.390	247.283	204.329	–869.715	21.477	–993.357	–932.918	–814.029	85.041
	600.00	113.756	267.711	213.234	–858.505	32.687	–1019.132	–930.352	–790.490	68.818
	700.00	116.927	285.487	222.313	–846.970	44.222	–1046.811	–927.667	–767.390	57.263
	800.00	119.995	301.301	231.216	–835.123	56.069	–1076.164	–924.892	–744.682	48.623
	900.00	123.003	315.609	239.810	–822.973	68.219	–1107.021	–922.060	–722.326	41.923
	966.00	124.966	324.382	245.291	–814.790	76.402	–1128.143	–920.160	–707.746	38.270
LIQ			48.943		47.279					
	966.00	146.440	373.326	245.291	–767.511	123.681	–1128.143	–872.881	–707.746	38.270
	1000.00	146.440	378.391	249.731	–762.532	128.660	–1140.923	–871.180	–701.964	36.667
	1100.00	146.440	392.348	262.072	–747.888	143.304	–1179.471	–869.385	–685.185	32.537
	1200.00	146.440	405.090	273.467	–733.244	157.948	–1219.352	–864.255	–668.667	29.106
	1300.00	146.440	416.812	284.049	–718.600	172.592	–1260.455	–866.456	–652.009	26.198

References

Phase	H / S	C _p
SOL	Pa2	Pa2
LIQ	Pa2	Pa2

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
GAS	298.15	80.043	401.154	401.154	-594.546	0.000	-714.150	-594.546	-624.036	109.328
	300.00	80.088	401.649	401.156	-594.398	0.148	-714.893	-594.659	-624.218	108.686
	400.00	81.612	424.926	404.319	-586.303	8.243	-756.274	-641.067	-624.542	81.557
	500.00	82.714	443.256	410.338	-578.087	16.459	-799.715	-641.290	-620.387	64.811
	600.00	83.827	458.435	417.124	-569.760	24.786	-844.821	-641.606	-616.178	53.643
	700.00	84.928	471.440	423.977	-561.322	33.224	-891.330	-642.019	-611.909	45.661
	800.00	85.967	482.849	430.637	-552.776	41.770	-939.056	-642.545	-607.574	39.670
	900.00	86.908	493.030	437.014	-544.132	50.414	-987.859	-643.218	-603.163	35.007
	1000.00	87.734	502.230	443.083	-535.399	59.147	-1037.629	-644.046	-598.670	31.271
	1100.00	88.438	510.626	448.847	-526.589	67.957	-1088.278	-648.086	-593.992	28.206
	1200.00	89.018	518.347	454.322	-517.715	76.831	-1139.732	-648.726	-589.046	25.641
	1300.00	89.479	525.492	459.525	-508.789	85.757	-1191.928	-656.645	-583.482	23.445
	1400.00	89.827	532.136	464.477	-499.823	94.723	-1244.814	-657.663	-577.816	21.559
	1500.00	90.071	538.342	469.197	-490.827	103.719	-1298.341	-658.660	-572.078	19.922
	1600.00	90.220	544.161	473.702	-481.812	112.734	-1352.469	-659.645	-566.274	18.487
	1700.00	90.285	549.633	478.009	-472.786	121.760	-1407.161	-660.628	-560.408	17.219
	1800.00	90.277	554.793	482.133	-463.757	130.789	-1462.385	-661.615	-554.484	16.091
	1900.00	90.208	559.673	486.087	-454.733	139.813	-1518.111	-662.615	-548.505	15.079
	2000.00	90.090	564.297	489.883	-445.717	148.829	-1574.311	-663.631	-542.473	14.168

References

Phase	H / S	C _p
GAS	Pa2	Pa2

247.266

PRASEODYMIUM CHLORIDE

PrCl3

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	98.970	153.302	153.302	-1056.899	0.000	-1102.606	-1056.899	-980.780	171.829
	300.00	99.138	153.915	153.304	-1056.716	0.183	-1102.890	-1056.861	-980.308	170.687
	400.00	105.494	183.381	157.279	-1046.458	10.441	-1119.811	-1054.584	-955.124	124.726
	500.00	110.731	207.489	164.980	-1035.645	21.254	-1139.389	-1052.028	-930.549	97.214
	600.00	115.560	228.113	173.823	-1024.325	32.574	-1161.193	-1049.227	-906.513	78.919
	700.00	119.825	246.253	182.900	-1012.552	44.347	-1184.929	-1046.217	-882.962	65.887
	800.00	123.732	262.510	191.853	-1000.373	56.526	-1210.381	-1043.046	-859.855	56.143
	900.00	127.780	277.313	200.538	-987.801	69.098	-1237.383	-1039.744	-837.153	48.587
	1000.00	132.641	291.017	208.908	-974.790	82.109	-1265.807	-1036.257	-814.828	42.562
	1059.00	136.199	298.719	213.698	-966.862	90.037	-1283.206	-1034.066	-801.826	39.550
LIQ			47.805		50.626					
	1059.00	133.888	346.525	213.698	-916.236	140.663	-1283.206	-983.440	-801.826	39.550
	1100.00	133.888	351.610	218.745	-910.747	146.152	-1297.518	-985.034	-794.730	37.739
	1200.00	133.888	363.260	230.309	-897.358	159.541	-1333.270	-981.137	-777.602	33.848
	1300.00	133.888	373.977	240.954	-883.969	172.930	-1370.139	-984.573	-760.232	30.546
	1400.00	133.888	383.899	250.814	-870.580	186.319	-1408.039	-981.153	-743.103	27.726
	1500.00	133.888	393.136	259.998	-857.191	199.708	-1446.896	-977.744	-726.219	25.289

References

Phase	H / S	C _p
SOL	Nb1/Pa2	Pa2
LIQ	Dw1	Dw1

Phase	T [K]	C _p [————— J / (K mol)]	S [————— J / (K mol)]	-(G-H298)/T [—————]	H [————— kJ / mol]	H-H298 [————— kJ / mol]	G [————— kJ / mol]	ΔH _f [————— kJ / mol]	ΔG _f [————— kJ / mol]	log K _f [—]
GAS	298.15	78.370	373.962	373.962	-731.363	0.000	-842.860	-731.363	-721.034	126.322
	300.00	78.432	374.447	373.964	-731.218	0.145	-843.552	-731.363	-720.970	125.532
	400.00	80.603	397.347	377.072	-723.253	8.110	-882.192	-731.379	-717.505	93.697
	500.00	82.042	415.492	383.003	-715.119	16.244	-922.865	-731.502	-714.025	74.594
	600.00	83.351	430.567	389.709	-706.848	24.515	-965.188	-731.750	-710.508	61.855
	700.00	84.574	443.509	396.492	-698.451	32.912	-1008.907	-732.116	-706.941	52.753
	800.00	85.693	454.876	403.094	-689.937	41.426	-1053.838	-732.610	-703.312	45.922
	900.00	86.691	465.028	409.421	-681.317	50.046	-1099.842	-733.260	-699.613	40.604
	1000.00	87.558	474.208	415.448	-672.603	58.760	-1146.811	-734.070	-695.832	36.347
	1100.00	88.292	482.589	421.176	-663.810	67.553	-1194.657	-738.097	-691.869	32.854
	1200.00	88.895	490.298	426.620	-654.949	76.414	-1243.307	-738.728	-687.638	29.932
	1300.00	89.374	497.433	431.796	-646.035	85.328	-1292.698	-746.639	-682.791	27.435
	1400.00	89.737	504.070	436.724	-637.078	94.285	-1342.777	-747.651	-677.841	25.291
	1500.00	89.992	510.271	441.423	-628.091	103.272	-1393.497	-748.644	-672.820	23.430
	1600.00	90.150	516.084	445.909	-619.083	112.280	-1444.818	-749.627	-667.733	21.799
	1700.00	90.223	521.552	450.200	-610.064	121.299	-1496.702	-750.609	-662.585	20.359
	1800.00	90.222	526.710	454.308	-601.041	130.322	-1549.118	-751.599	-657.378	19.077
	1900.00	90.158	531.586	458.248	-592.021	139.342	-1602.035	-752.602	-652.116	17.928
	2000.00	90.045	536.208	462.032	-583.011	148.352	-1655.427	-753.626	-646.801	16.893

References

Phase	H / S	C _p
GAS	Pa2	Pa2

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f kJ / mol	ΔG _f kJ / mol	log K _f [—]
SOL	298.15	92.634	121.211	121.211	-1689.081	0.000	-1725.220	-1689.081	-1612.482	282.500
	300.00	92.785	121.784	121.212	-1688.909	0.172	-1725.445	-1689.047	-1612.007	280.675
	400.00	99.650	149.472	124.941	-1679.269	9.812	-1739.057	-1687.007	-1586.625	207.192
	500.00	104.684	172.276	132.193	-1669.040	20.041	-1755.178	-1684.724	-1561.790	163.159
	600.00	108.438	191.711	140.533	-1658.374	30.707	-1773.401	-1682.333	-1537.427	133.845
	700.00	111.209	208.646	149.080	-1647.385	41.696	-1793.437	-1679.917	-1513.467	112.936
	800.00	113.219	223.635	157.481	-1636.158	52.923	-1815.065	-1677.549	-1489.851	97.277
	900.00	114.668	237.058	165.590	-1624.760	64.321	-1838.112	-1675.304	-1466.525	85.115
	1000.00	115.741	249.198	173.353	-1613.237	75.844	-1862.434	-1673.214	-1443.441	75.398
	1100.00	116.621	260.271	180.759	-1601.618	87.463	-1887.916	-1674.345	-1420.465	67.452
	1200.00	117.486	270.455	187.815	-1589.913	99.168	-1914.459	-1672.078	-1397.485	60.831
	1300.00	118.513	279.898	194.539	-1578.115	110.966	-1941.982	-1677.066	-1374.130	55.213
	1400.00	119.880	288.728	200.955	-1566.199	122.882	-1970.418	-1675.091	-1350.900	50.403
	1500.00	121.762	297.059	207.087	-1554.122	134.959	-1999.711	-1672.976	-1327.817	46.239
	1600.00	124.335	304.996	212.960	-1541.824	147.257	-2029.817	-1670.659	-1304.880	42.600
	1672.00	126.713	310.519	217.043	-1532.789	156.292	-2051.976	-1668.822	-1288.461	40.253
LIQ			34.283		57.321					
	1672.00	130.750	344.802	217.043	-1475.468	213.613	-2051.976	-1611.501	-1288.461	40.253
	1700.00	130.750	346.973	219.165	-1471.807	217.274	-2061.661	-1610.642	-1283.058	39.424
	1800.00	130.750	354.447	226.475	-1458.732	230.349	-2096.736	-1607.583	-1263.877	36.677

References

Phase	H / S	C _p
SOL	Pa2	Pa2
LIQ	Pa2	Pa2

PrF3[g]

PRASEODYMIUM FLUORIDE (GAS)

197.903

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
[————— kJ / mol —————]										
GAS	298.15	72.391	339.444	339.444	-1258.129	0.000	-1359.334	-1258.129	-1246.597	218.399
	300.00	72.498	339.893	339.446	-1257.995	0.134	-1359.963	-1258.133	-1246.525	217.039
	400.00	76.638	361.376	342.347	-1250.517	7.612	-1395.068	-1258.255	-1242.635	162.272
	500.00	79.287	378.777	347.948	-1242.714	15.415	-1432.103	-1258.398	-1238.715	129.408
	600.00	81.348	393.422	354.338	-1234.679	23.450	-1470.732	-1258.638	-1234.758	107.495
	700.00	83.061	406.094	360.847	-1226.456	31.673	-1510.722	-1258.988	-1230.752	91.840
	800.00	84.514	417.283	367.216	-1218.075	40.054	-1551.901	-1259.467	-1226.687	80.094
	900.00	85.747	427.310	373.345	-1209.561	48.568	-1594.140	-1260.105	-1222.553	70.955
	1000.00	86.786	436.400	379.203	-1200.932	57.197	-1637.332	-1260.910	-1218.339	63.640
	1100.00	87.649	444.713	384.786	-1192.209	65.920	-1681.394	-1264.936	-1213.943	57.645
	1200.00	88.352	452.371	390.103	-1183.408	74.721	-1726.253	-1265.572	-1209.279	52.639
	1300.00	88.910	459.466	395.170	-1174.544	83.585	-1771.849	-1273.494	-1203.997	48.377
	1400.00	89.335	466.071	400.001	-1165.630	92.499	-1818.130	-1274.522	-1198.612	44.721
	1500.00	89.641	472.246	404.613	-1156.681	101.448	-1865.049	-1275.535	-1193.155	41.549
	1600.00	89.842	478.038	409.023	-1147.706	110.423	-1912.566	-1276.541	-1187.630	38.772
	1700.00	89.950	483.488	413.245	-1138.715	119.414	-1960.645	-1277.550	-1182.042	36.320
	1800.00	89.978	488.631	417.292	-1129.718	128.411	-2009.254	-1278.569	-1176.395	34.138
	1900.00	89.939	493.495	421.175	-1120.722	137.407	-2058.362	-1279.604	-1170.690	32.185
	2000.00	89.846	498.106	424.908	-1111.732	146.397	-2107.944	-1280.660	-1164.931	30.425

References

Phase	H / S	C _p
GAS	Pa2	Pa2

PrH2

PRASEODYMIUM DIHYDRIDE

142.924

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
[————— kJ / mol —————]										
SOL	298.15	41.094	56.902	56.902	-198.322	0.000	-215.287	-198.322	-154.283	27.030
	300.00	41.129	57.157	56.903	-198.246	0.076	-215.393	-198.350	-154.009	26.815
	400.00	43.012	69.247	58.539	-194.039	4.283	-221.738	-199.829	-139.004	18.152
	500.00	44.894	79.047	61.690	-189.644	8.678	-229.167	-201.258	-123.632	12.916
	600.00	46.777	87.398	65.295	-185.060	13.262	-237.499	-202.669	-107.974	9.400
	700.00	48.660	94.750	68.988	-180.288	18.034	-246.613	-204.082	-92.080	6.871
	800.00	50.543	101.371	72.628	-175.328	22.994	-256.425	-205.525	-75.982	4.961
	900.00	52.426	107.433	76.163	-170.180	28.142	-266.869	-207.033	-59.699	3.465
	1000.00	54.308	113.054	79.575	-164.843	33.479	-277.897	-208.613	-43.245	2.259
	1100.00	56.191	118.318	82.860	-159.318	39.004	-289.468	-213.316	-26.535	1.260
	1200.00	58.074	123.288	86.024	-153.605	44.717	-301.550	-214.526	-9.500	0.414

References

Phase	H / S	C _p
SOL	Nb1,B2	B2,e

521.621

PRASEODYMIUM IODIDE

PrI3

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	99.724	228.865	228.865	-654.378	0.000	-722.614	-654.378	-648.630	113.637
	300.00	99.847	229.482	228.867	-654.193	0.185	-723.038	-654.395	-648.594	112.930
	400.00	105.381	259.009	232.855	-643.916	10.462	-747.520	-679.356	-645.685	84.318
	500.00	109.621	282.996	240.558	-633.159	21.219	-774.657	-743.791	-631.073	65.928
	600.00	113.231	303.308	249.366	-622.013	32.365	-803.998	-741.337	-608.757	52.997
	700.00	116.500	321.011	258.363	-610.524	43.854	-835.232	-738.740	-586.864	43.792
	800.00	119.583	336.770	267.196	-598.719	55.659	-868.135	-736.044	-565.350	36.914
	900.00	122.581	351.029	275.731	-586.610	67.768	-902.536	-733.287	-544.179	31.583
	1000.00	125.571	364.098	283.923	-574.203	80.175	-938.301	-730.473	-523.317	27.335
	1011.00	125.902	365.474	284.803	-572.820	81.558	-942.314	-730.160	-521.040	26.920
LIQ			52.559		53.137					
	1011.00	142.256	418.033	284.803	-519.683	134.695	-942.314	-677.023	-521.040	26.920
	1100.00	142.256	430.035	296.075	-507.022	147.356	-980.060	-676.174	-507.383	24.094
	1200.00	142.256	442.413	307.762	-492.797	161.581	-1023.692	-671.496	-492.245	21.427
	1300.00	142.256	453.799	318.563	-478.571	175.807	-1068.510	-674.147	-476.931	19.163

References

Phase	H / S	C _p
SOL	Nb1/Pa2	Pa2,e
LIQ	Dw1	Pa2,Dw1

PrI3[g]

PRASEODYMIUM IODIDE (GAS)

521.621

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	81.558	430.187	430.187	-379.070	0.000	-507.330	-379.070	-433.346	75.920
	300.00	81.587	430.692	430.189	-378.919	0.151	-508.127	-379.121	-433.683	75.511
	400.00	82.495	454.303	433.402	-370.709	8.361	-552.431	-406.149	-450.596	58.842
	500.00	83.292	472.794	439.497	-362.421	16.649	-598.819	-473.053	-455.234	47.558
	600.00	84.233	488.062	446.355	-354.046	25.024	-646.883	-473.370	-451.642	39.319
	700.00	85.229	501.121	453.268	-345.573	33.497	-696.358	-473.789	-447.989	33.429
	800.00	86.197	512.566	459.980	-337.001	42.069	-747.054	-474.326	-444.269	29.008
	900.00	87.091	522.771	466.400	-328.336	50.734	-798.830	-475.013	-440.472	25.564
	1000.00	87.883	531.989	472.505	-319.586	59.484	-851.575	-475.857	-436.591	22.805
	1100.00	88.561	540.397	478.300	-310.763	68.307	-905.200	-479.915	-432.523	20.539
	1200.00	89.122	548.128	483.802	-301.878	77.192	-959.632	-480.577	-428.185	18.638
	1300.00	89.568	555.280	489.028	-292.943	86.127	-1014.807	-488.519	-423.228	17.006
	1400.00	89.904	561.931	494.001	-283.968	95.102	-1070.671	-489.563	-418.166	15.602
	1500.00	90.138	568.142	498.739	-274.965	104.105	-1127.178	-490.587	-413.031	14.383
	1600.00	90.279	573.964	503.260	-265.944	113.126	-1184.287	-491.601	-407.827	13.314
	1700.00	90.337	579.440	507.582	-256.912	122.158	-1241.960	-492.615	-402.560	12.369
	1800.00	90.324	584.603	511.719	-247.879	131.191	-1300.164	-493.635	-397.233	11.527
	1900.00	90.250	589.485	515.685	-238.850	140.220	-1358.871	-494.669	-391.850	10.773
	2000.00	90.128	594.111	519.491	-229.830	149.240	-1418.053	-495.722	-386.411	10.092

References

Phase	H / S	C _p
GAS	Pa2	Pa2

PrO1.833

PRASEODYMIUM 1.833-OXIDE

170.187

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL-A	298.15	63.268	79.914	79.914	-943.576	0.000	-967.402	-943.576	-889.394	155.818
	300.00	63.448	80.306	79.916	-943.459	0.117	-967.551	-943.559	-889.058	154.799
	400.00	70.875	99.663	82.505	-936.712	6.864	-976.578	-942.312	-871.063	113.749
	500.00	76.032	116.057	87.617	-929.356	14.220	-987.385	-940.656	-853.437	89.158
	600.00	80.297	130.305	93.570	-921.535	22.041	-999.718	-938.791	-836.165	72.795
	700.00	84.140	142.975	99.739	-913.311	30.265	-1013.393	-936.792	-819.218	61.131
	760.00	86.330	149.984	103.432	-908.196	35.380	-1022.184	-935.544	-809.192	55.616
			2.092		1.590					
SOL-B	760.00	87.162	152.076	103.432	-906.606	36.970	-1022.184	-933.954	-809.192	55.616
	800.00	89.186	156.599	105.978	-903.079	40.497	-1028.358	-933.065	-802.648	52.408
	900.00	94.224	167.394	112.208	-893.908	49.668	-1044.563	-930.691	-786.486	45.646
	1000.00	99.239	177.581	118.241	-884.235	59.341	-1061.817	-928.098	-770.600	40.252
	1100.00	104.241	187.275	124.079	-874.061	69.515	-1080.063	-928.325	-754.892	35.847

References

Phase	H / S	C _p
SOL-A	Fi4/We1	Pa1
SOL-B	Pa1	Pa1

172.906

PRASEODYMIUM DIOXIDE

PrO2

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	72.935	79.914	79.914	-949.350	0.000	-973.176	-949.350	-889.969	155.919
	300.00	73.130	80.366	79.916	-949.215	0.135	-973.325	-949.320	-889.601	154.893
	400.00	80.859	102.571	82.891	-941.478	7.872	-982.506	-947.334	-869.977	113.607
	500.00	85.780	121.172	88.738	-933.133	16.217	-993.719	-944.949	-850.909	88.894
	600.00	89.597	137.160	95.507	-924.358	24.992	-1006.654	-942.399	-832.338	72.461
	700.00	92.891	151.224	102.482	-915.230	34.120	-1021.087	-939.774	-814.201	60.756
	800.00	95.907	163.827	109.375	-905.789	43.561	-1036.850	-937.120	-796.444	52.002
	900.00	98.762	175.289	116.072	-896.054	53.296	-1053.815	-934.472	-779.018	45.213
	1000.00	101.516	185.838	122.528	-886.040	63.310	-1071.878	-931.832	-761.887	39.797
	1100.00	104.205	195.640	128.734	-875.753	73.597	-1090.957	-932.245	-744.927	35.374

References

Phase	H / S	C _p
SOL	Nb1/We1	e

329.814

PRASEODYMIUM OXIDE

Pr2O3

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	117.984	155.645	155.645	-1809.664	0.000	-1856.069	-1809.664	-1720.237	301.378
	300.00	118.172	156.375	155.647	-1809.446	0.218	-1856.358	-1809.629	-1719.683	299.423
	400.00	125.671	191.500	160.385	-1797.218	12.446	-1873.818	-1807.418	-1690.021	220.694
	500.00	130.505	220.091	169.556	-1784.396	25.268	-1894.442	-1804.987	-1660.952	173.518
	600.00	134.290	244.230	180.041	-1771.151	38.513	-1917.689	-1802.612	-1632.370	142.110
	700.00	137.580	265.182	190.740	-1757.555	52.109	-1943.182	-1800.393	-1604.174	119.705
	800.00	140.606	283.753	201.228	-1743.644	66.020	-1970.646	-1798.389	-1576.283	102.921
	900.00	143.479	300.481	211.342	-1729.438	80.226	-1999.871	-1796.654	-1548.627	89.880
	1000.00	146.256	315.742	221.030	-1714.951	94.713	-2030.694	-1795.185	-1521.150	79.457
	1100.00	148.971	329.810	230.287	-1700.189	109.475	-2062.980	-1800.066	-1493.621	70.926
	1200.00	151.644	342.887	239.132	-1685.158	124.506	-2096.623	-1798.049	-1465.849	63.807
	1300.00	154.287	355.130	247.589	-1669.861	139.803	-2131.530	-1810.458	-1437.123	57.744
	1400.00	156.908	366.659	255.686	-1654.301	155.363	-2167.625	-1808.912	-1408.461	52.550
	1500.00	159.513	377.574	263.451	-1638.480	171.184	-2204.841	-1807.147	-1379.918	48.053
	1600.00	162.106	387.952	270.911	-1622.399	187.265	-2243.122	-1805.160	-1351.500	44.122
	1700.00	164.690	397.857	278.089	-1606.059	203.605	-2282.416	-1802.952	-1323.212	40.657
	1800.00	167.266	407.343	285.008	-1589.462	220.202	-2322.679	-1800.522	-1295.061	37.582

References

Phase	H / S	C _p
SOL	Fi4,Pa1	Pa1

Pr7O12

7-PRASEODYMIUM 12-OXIDE

1178.346

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [————— kJ / mol —————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	422.875	560.656	560.656	-6509.999	0.000	-6677.159	-6509.999	-6155.873	1078.483
	300.00	423.488	563.274	560.664	-6509.216	0.783	-6678.198	-6509.898	-6153.676	1071.450
	400.00	448.692	688.861	577.616	-6465.501	44.498	-6741.046	-6503.470	-6035.863	788.203
	500.00	465.943	790.922	610.387	-6419.732	90.267	-6815.192	-6496.363	-5919.782	618.435
	600.00	480.063	877.152	647.844	-6372.414	137.585	-6898.705	-6489.461	-5805.121	505.381
	700.00	492.705	952.117	686.071	-6323.767	186.232	-6990.249	-6483.076	-5691.577	424.711
	800.00	504.559	1018.689	723.564	-6273.899	236.100	-7088.850	-6477.383	-5578.904	364.265
	900.00	515.955	1078.778	759.747	-6222.871	287.128	-7193.771	-6472.557	-5466.893	317.290
	1000.00	527.067	1133.717	794.435	-6170.718	339.281	-7304.434	-6468.563	-5355.374	279.736
	1100.00	537.993	1184.465	827.615	-6117.463	392.536	-7420.375	-6486.693	-5243.565	248.996

References

Phase	H / S	C _p
SOL	Nb1/We1	We1

PrS

PRASEODYMIUM MONOSULFIDE

172.974

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [————— kJ / mol —————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	53.278	77.822	77.822	-451.872	0.000	-475.075	-451.872	-443.475	77.695
	300.00	53.286	78.152	77.823	-451.773	0.099	-475.219	-451.866	-443.423	77.207
	400.00	53.726	93.542	79.919	-446.423	5.449	-483.839	-453.877	-440.556	57.531
	500.00	54.166	105.577	83.890	-441.028	10.844	-493.817	-455.286	-437.088	45.662
	600.00	54.606	115.492	88.355	-435.590	16.282	-504.885	-456.489	-433.329	37.725
	700.00	55.046	123.943	92.850	-430.107	21.765	-516.867	-457.564	-429.385	32.041
	800.00	55.487	131.322	97.207	-424.580	27.292	-529.638	-458.847	-425.276	27.768
	900.00	55.927	137.883	101.369	-419.010	32.862	-543.104	-513.164	-419.836	24.367
	1000.00	56.367	143.798	105.321	-413.395	38.477	-557.193	-513.297	-409.461	21.388
	1100.00	56.807	149.191	109.068	-407.736	44.136	-571.846	-516.671	-398.970	18.946
	1200.00	57.247	154.153	112.621	-402.034	49.838	-587.017	-516.662	-388.270	16.901
	1300.00	57.687	158.752	115.994	-396.287	55.585	-602.665	-523.935	-377.007	15.148
	1400.00	58.127	163.043	119.203	-390.496	61.376	-618.757	-524.300	-365.691	13.644
	1500.00	58.568	167.069	122.262	-384.661	67.211	-635.265	-524.626	-354.350	12.340
	1600.00	59.008	170.863	125.182	-378.783	73.089	-652.163	-524.912	-342.988	11.197
	1700.00	59.448	174.453	127.975	-372.860	79.012	-669.430	-525.159	-331.610	10.189
	1800.00	59.888	177.864	130.653	-366.893	84.979	-687.048	-525.366	-320.219	9.293
	1900.00	60.328	181.113	133.224	-360.882	90.990	-704.998	-525.533	-308.817	8.490
	2000.00	60.768	184.219	135.697	-354.827	97.045	-723.265	-525.659	-297.408	7.767

References

Phase	H / S	C _p	Remarks
SOL	Mi1	Mi1	Mi1 MPT= 2500.

550.987

TRIPRASEODYMIUM TETRASULFIDE

Pr3S4

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	179.163	256.061	256.061	-1554.356	0.000	-1630.701	-1554.356	-1526.343	267.409
	300.00	179.192	257.169	256.064	-1554.025	0.331	-1631.175	-1554.346	-1526.169	265.730
	400.00	180.766	308.935	263.112	-1536.027	18.329	-1659.601	-1563.013	-1516.472	198.031
	500.00	182.339	349.441	276.472	-1517.871	36.485	-1692.592	-1569.170	-1504.222	157.145
	600.00	183.912	382.824	291.496	-1499.559	54.797	-1729.253	-1574.358	-1490.718	129.779
	700.00	185.485	411.292	306.625	-1481.089	73.267	-1768.994	-1578.870	-1476.423	110.172
	800.00	187.058	436.163	321.295	-1462.462	91.894	-1811.392	-1584.033	-1461.449	95.423
	900.00	188.631	458.286	335.310	-1443.677	110.679	-1856.135	-1801.119	-1441.164	83.643
	1000.00	190.205	478.242	348.622	-1424.736	129.620	-1902.978	-1801.255	-1401.167	73.189
	1100.00	191.778	496.444	361.245	-1405.636	148.720	-1951.725	-1811.094	-1360.849	64.621
	1200.00	193.351	513.198	373.218	-1386.380	167.976	-2002.218	-1810.767	-1319.931	57.455
	1300.00	194.924	528.737	384.591	-1366.966	187.390	-2054.324	-1832.267	-1277.348	51.324
	1400.00	196.497	543.240	395.411	-1347.395	206.961	-2107.931	-1833.023	-1234.633	46.065
	1500.00	198.071	556.850	405.724	-1327.667	226.689	-2162.943	-1833.641	-1191.868	41.505
	1600.00	199.644	569.684	415.575	-1307.781	246.575	-2219.275	-1834.119	-1149.067	37.513
	1700.00	201.217	581.834	425.000	-1287.738	266.618	-2276.857	-1834.457	-1106.240	33.991
	1800.00	202.790	593.380	434.037	-1267.538	286.818	-2335.622	-1834.654	-1063.397	30.859
	1900.00	204.363	604.387	442.715	-1247.180	307.176	-2395.515	-1834.710	-1020.548	28.057
	2000.00	205.936	614.909	451.064	-1226.665	327.691	-2456.483	-1834.624	-977.699	25.535

References

Phase	H / S	C _p
SOL	Mi1	Mi1

Pt

PLATINUM

195.080

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	25.852	41.631	41.631	0.000	0.000	-12.412	0.000	0.000	0.000
	300.00	25.864	41.791	41.631	0.048	0.048	-12.489	0.000	0.000	0.000
	400.00	26.446	49.313	42.653	2.664	2.664	-17.061	0.000	0.000	0.000
	500.00	26.989	55.272	44.601	5.336	5.336	-22.300	0.000	0.000	0.000
	600.00	27.518	60.240	46.805	8.061	8.061	-28.083	0.000	0.000	0.000
	700.00	28.042	64.521	49.037	10.839	10.839	-34.326	0.000	0.000	0.000
	800.00	28.565	68.300	51.213	13.669	13.669	-40.970	0.000	0.000	0.000
	900.00	29.088	71.695	53.303	16.552	16.552	-47.973	0.000	0.000	0.000
	1000.00	29.613	74.786	55.299	19.487	19.487	-55.299	0.000	0.000	0.000
	1100.00	30.140	77.634	57.202	22.475	22.475	-62.922	0.000	0.000	0.000
	1200.00	30.669	80.279	59.016	25.515	25.515	-70.819	0.000	0.000	0.000
	1300.00	31.257	82.758	60.748	28.613	28.613	-78.972	0.000	0.000	0.000
	1400.00	31.759	85.093	62.404	31.764	31.764	-87.366	0.000	0.000	0.000
	1500.00	32.258	87.301	63.991	34.965	34.965	-95.987	0.000	0.000	0.000
	1600.00	32.781	89.399	65.514	38.216	38.216	-104.823	0.000	0.000	0.000
	1700.00	33.322	91.403	66.978	41.521	41.521	-113.863	0.000	0.000	0.000
	1800.00	33.864	93.323	68.389	44.881	44.881	-123.100	0.000	0.000	0.000
	1900.00	34.386	95.168	69.750	48.294	48.294	-132.525	0.000	0.000	0.000
	2000.00	34.863	96.944	71.066	51.756	51.756	-142.132	0.000	0.000	0.000
	2045.00	35.058	97.722	71.644	53.330	53.330	-146.512	0.000	0.000	0.000
LIQ			9.616		19.665					
	2045.00	34.727	107.338	71.644	72.995	72.995	-146.512	0.000	0.000	0.000
	2100.00	34.727	108.260	72.591	74.905	74.905	-152.441	0.000	0.000	0.000
	2200.00	34.727	109.875	74.249	78.377	78.377	-163.348	0.000	0.000	0.000
	2300.00	34.727	111.419	75.832	81.850	81.850	-174.413	0.000	0.000	0.000
	2400.00	34.727	112.897	77.346	85.323	85.323	-185.630	0.000	0.000	0.000
	2500.00	34.727	114.315	78.796	88.796	88.796	-196.991	0.000	0.000	0.000
	2600.00	34.727	115.677	80.189	92.268	92.268	-208.491	0.000	0.000	0.000
	2700.00	34.727	116.987	81.528	95.741	95.741	-220.124	0.000	0.000	0.000
	2800.00	34.727	118.250	82.817	99.214	99.214	-231.887	0.000	0.000	0.000
	2900.00	34.727	119.469	84.060	102.686	102.686	-243.773	0.000	0.000	0.000
	3000.00	34.727	120.646	85.260	106.159	106.159	-255.779	0.000	0.000	0.000
	3100.00	34.727	121.785	86.420	109.632	109.632	-267.901	0.000	0.000	0.000
	3200.00	34.727	122.887	87.542	113.105	113.105	-280.135	0.000	0.000	0.000
	3300.00	34.727	123.956	88.629	116.577	116.577	-292.477	0.000	0.000	0.000
	3400.00	34.727	124.993	89.684	120.050	120.050	-304.925	0.000	0.000	0.000
	3500.00	34.727	125.999	90.707	123.523	123.523	-317.475	0.000	0.000	0.000
	3600.00	34.727	126.978	91.701	126.996	126.996	-330.124	0.000	0.000	0.000
	3700.00	34.727	127.929	92.667	130.468	130.468	-342.869	0.000	0.000	0.000
	3800.00	34.727	128.855	93.608	133.941	133.941	-355.709	0.000	0.000	0.000
	3900.00	34.727	129.757	94.523	137.414	137.414	-368.639	0.000	0.000	0.000
	4000.00	34.727	130.636	95.415	140.886	140.886	-381.659	0.000	0.000	0.000
	4096.00	34.727	131.460	96.250	144.220	144.220	-394.240	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL	Hu1	Hu1	Hu1 MPT= 2045. (IPTS REF.PT.)
LIQ	Hu1	Hu1	Hu1 BPT= 4096., L= 509.82 kJ

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	25.542	192.406	192.406	564.840	0.000	507.474	564.840	519.886	-91.082
	300.00	25.596	192.564	192.407	564.887	0.047	507.118	564.839	519.607	-90.472
	400.00	27.051	200.186	193.436	567.540	2.700	487.466	564.876	504.527	-65.884
	500.00	26.908	206.224	195.413	570.246	5.406	467.134	564.910	489.434	-51.131
	600.00	26.207	211.072	197.632	572.904	8.064	446.261	564.843	474.343	-41.295
	700.00	25.382	215.050	199.845	575.483	10.643	424.948	564.644	459.274	-34.271
	800.00	24.612	218.388	201.960	577.982	13.142	403.272	564.313	444.242	-29.006
	900.00	23.967	221.248	203.948	580.410	15.570	381.287	563.858	429.259	-24.914
	1000.00	23.463	223.746	205.806	582.780	17.940	359.034	563.293	414.333	-21.643
	1100.00	23.088	225.964	207.539	585.107	20.267	336.547	562.632	399.469	-18.969
	1200.00	22.813	227.960	209.159	587.401	22.561	313.849	561.886	384.668	-16.744
	1300.00	22.604	229.778	210.677	589.672	24.832	290.961	561.059	369.933	-14.864
	1400.00	22.418	231.446	212.101	591.923	27.083	267.898	560.159	355.264	-13.255
	1500.00	22.296	232.988	213.443	594.158	29.318	244.676	559.193	340.662	-11.863
	1600.00	22.226	234.425	214.710	596.384	31.544	221.304	558.167	326.127	-10.647
	1700.00	22.197	235.771	215.910	598.605	33.765	197.794	557.083	311.657	-9.576
	1800.00	22.200	237.040	217.049	600.824	35.984	174.152	555.944	297.253	-8.626
	1900.00	22.227	238.241	218.133	603.045	38.205	150.388	554.752	282.913	-7.778
	2000.00	22.273	239.382	219.167	605.270	40.430	126.506	553.514	268.638	-7.016
	2100.00	22.334	240.470	220.156	607.500	42.660	102.513	532.596	254.954	-6.342
	2200.00	22.406	241.511	221.103	609.737	44.897	78.414	531.360	241.762	-5.740
	2300.00	22.489	242.509	222.012	611.982	47.142	54.212	530.132	228.626	-5.192
	2400.00	22.578	243.468	222.886	614.235	49.395	29.913	528.913	215.543	-4.691
	2500.00	22.674	244.391	223.728	616.498	51.658	5.520	527.702	202.511	-4.231
	2600.00	22.774	245.282	224.540	618.770	53.930	-18.964	526.502	189.527	-3.808
	2700.00	22.877	246.144	225.324	621.053	56.213	-43.535	525.312	176.589	-3.416
	2800.00	22.983	246.978	226.083	623.346	58.506	-68.192	524.132	163.695	-3.054
	2900.00	23.091	247.786	226.817	625.650	60.810	-92.930	522.963	150.843	-2.717
	3000.00	23.200	248.571	227.529	627.964	63.124	-117.748	521.805	138.031	-2.403
	3100.00	23.310	249.333	228.220	630.290	65.450	-142.643	520.658	125.257	-2.111
	3200.00	23.420	250.075	228.892	632.626	67.786	-167.614	519.522	112.521	-1.837
	3300.00	23.531	250.797	229.545	634.974	70.134	-192.658	518.396	99.819	-1.580
	3400.00	23.640	251.502	230.180	637.332	72.492	-217.773	517.282	87.152	-1.339
	3500.00	23.750	252.188	230.799	639.702	74.862	-242.958	516.179	74.517	-1.112
	3600.00	23.858	252.859	231.403	642.082	77.242	-268.210	515.087	61.914	-0.898
	3700.00	23.965	253.514	231.992	644.473	79.633	-293.529	514.005	49.340	-0.697
	3800.00	24.071	254.155	232.566	646.875	82.035	-318.912	512.934	36.796	-0.506
	3900.00	24.176	254.781	233.128	649.287	84.447	-344.359	511.874	24.280	-0.325
	4000.00	24.279	255.395	233.677	651.710	86.870	-369.868	510.824	11.791	-0.154
	4100.00	24.267	255.994	234.214	654.137	89.297	-395.438	0.000	0.000	0.000
	4200.00	24.267	256.579	234.740	656.564	91.724	-421.066	0.000	0.000	0.000
	4300.00	24.267	257.150	235.254	658.990	94.150	-446.753	0.000	0.000	0.000
	4400.00	24.267	257.708	235.758	661.417	96.577	-472.496	0.000	0.000	0.000
	4500.00	24.267	258.253	236.252	663.844	99.004	-498.294	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1,e

PtBr2

PLATINUM DIBROMIDE

354.888

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	75.897	53.430	53.430	-100.416	0.000	-116.346	-100.416	-58.553	10.258
	300.00	75.940	53.899	53.431	-100.276	0.140	-116.445	-100.463	-58.293	10.150
	400.00	78.241	76.061	56.437	-92.567	7.849	-122.991	-129.852	-38.113	4.977
	500.00	80.542	93.767	62.190	-84.627	15.789	-131.511	-128.277	-15.358	1.604
	600.00	82.843	108.655	68.725	-76.458	23.958	-141.651	-126.552	7.067	-0.615
	700.00	85.144	121.598	75.374	-68.059	32.357	-153.177	-124.666	29.190	-2.178
	800.00	87.446	133.118	81.884	-59.429	40.987	-165.924	-122.614	51.031	-3.332

References

Phase	H / S	C _p
SOL	Tk1	e

PtBr3

PLATINUM TRIBROMIDE

434.792

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	100.370	111.294	111.294	-130.959	0.000	-164.141	-130.959	-83.657	14.656
	300.00	100.416	111.915	111.296	-130.773	0.186	-164.348	-131.031	-83.363	14.515
	400.00	102.926	141.147	115.265	-120.606	10.353	-177.065	-175.203	-58.279	7.610
	500.00	105.437	164.384	122.842	-110.188	20.771	-192.380	-172.995	-29.300	3.061
	600.00	107.947	183.829	131.429	-99.519	31.440	-209.816	-170.629	-0.781	0.068
	700.00	110.458	200.658	140.143	-88.599	42.360	-229.059	-168.090	27.329	-2.039
	800.00	112.968	215.572	148.657	-77.427	53.532	-249.885	-165.370	55.062	-3.595
	900.00	115.478	229.022	156.851	-66.005	64.954	-272.125	-162.466	82.444	-4.785
	1000.00	117.989	241.319	164.692	-54.332	76.627	-295.651	-159.377	109.492	-5.719

References

Phase	H / S	C _p
SOL	Tk1	e

514.696

PLATINUM TETRABROMIDE

PtBr4

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	125.536	163.544	163.544	-158.992	0.000	-207.753	-158.992	-104.578	18.322
	300.00	125.728	164.321	163.547	-158.760	0.232	-208.056	-159.087	-104.240	18.150
	400.00	136.084	201.909	168.602	-145.669	13.323	-226.433	-217.577	-73.738	9.629
	500.00	146.440	233.388	178.490	-131.543	27.449	-248.237	-213.507	-38.231	3.994

References

Phase	H / S	C _p
SOL	Tk1	e

265.985

PLATINUM DICHLORIDE

PtCl2

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	75.411	219.618	219.618	-106.692	0.000	-172.171	-106.692	-93.237	16.335
	300.00	75.479	220.085	219.620	-106.552	0.140	-172.578	-106.663	-93.153	16.219
	400.00	79.161	242.303	222.624	-98.820	7.872	-195.742	-105.014	-88.894	11.608
	500.00	82.843	260.363	228.419	-90.720	15.972	-220.902	-103.157	-85.074	8.888
	600.00	86.525	275.793	235.059	-82.252	24.440	-247.727	-101.049	-81.651	7.108
	700.00	90.207	289.407	241.869	-73.415	33.277	-276.000	-98.667	-78.602	5.865

References

Phase	H / S	C _p
SOL	Tk1	e

PtCl3

PLATINUM TRICHLORIDE

301.438

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	121.336	246.910	246.910	-168.197	0.000	-241.813	-168.197	-129.618	22.708
	300.00	121.336	247.661	246.913	-167.973	0.224	-242.271	-168.115	-129.379	22.527
	400.00	121.336	282.567	251.672	-155.839	12.358	-268.866	-163.798	-117.124	15.295
	500.00	121.336	309.642	260.659	-143.705	24.492	-298.527	-159.692	-105.935	11.067

References

Phase	H / S	C _p
SOL	Tk1	e

PtCl4

PLATINUM TETRACHLORIDE

336.891

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	125.519	267.885	267.885	-229.283	0.000	-309.153	-229.283	-163.696	28.679
	300.00	125.899	268.662	267.887	-229.050	0.233	-309.649	-229.224	-163.289	28.431
	400.00	146.439	307.694	273.071	-215.434	13.849	-338.511	-225.157	-141.876	18.527

References

Phase	H / S	C _p
SOL	Tk1	e

702.698

PLATINUM TETRAIODIDE

PtI4

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	125.522	180.749	180.749	-72.802	0.000	-126.692	-72.802	-45.025	7.888
	300.00	125.715	181.526	180.751	-72.570	0.232	-127.027	-72.819	-44.852	7.809
	400.00	136.126	219.118	185.807	-59.478	13.324	-147.125	-105.620	-34.292	4.478
	500.00	146.538	250.612	195.696	-45.344	27.458	-170.650	-190.546	-8.302	0.867
	600.00	156.950	278.249	207.196	-30.170	42.632	-197.119	-185.600	27.698	-2.411
	700.00	167.362	303.225	219.157	-13.954	58.848	-226.212	-179.688	62.794	-4.686

References

Phase	H / S	C _p
SOL	Nb1/e	e

227.079

PLATINUM DIOXIDE (GAS)

PtO2[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	43.118	259.517	259.517	170.707	0.000	93.332	170.707	166.909	-29.242
	300.00	43.281	259.785	259.518	170.787	0.080	92.852	170.685	166.885	-29.057
	400.00	49.084	273.146	261.300	175.445	4.738	66.187	169.756	165.771	-21.647
	500.00	51.882	284.431	264.830	180.508	9.801	38.292	169.088	164.855	-17.222
	600.00	53.497	294.045	268.918	185.783	15.076	9.356	168.478	164.065	-14.283
	700.00	54.554	302.376	273.116	191.189	20.482	-20.474	167.851	163.379	-12.191
	800.00	55.314	309.713	277.241	196.684	25.977	-51.086	167.179	162.786	-10.629
	900.00	55.900	316.263	281.219	202.246	31.539	-82.390	166.453	162.279	-9.418
	1000.00	56.379	322.178	285.024	207.861	37.154	-114.317	165.671	161.857	-8.455
	1100.00	56.788	327.571	288.651	213.520	42.813	-146.809	164.833	161.516	-7.670
	1200.00	57.149	332.528	292.103	219.217	48.510	-179.817	163.940	161.253	-7.019
	1300.00	57.477	337.116	295.392	224.948	54.241	-213.302	162.991	161.067	-6.472
	1400.00	57.780	341.386	298.526	230.711	60.004	-247.230	161.990	160.957	-6.005
	1500.00	58.065	345.383	301.518	236.504	65.797	-281.570	160.941	160.919	-5.604
	1600.00	58.336	349.139	304.378	242.324	71.617	-316.298	159.842	160.953	-5.255
	1700.00	58.596	352.683	307.116	248.170	77.463	-351.391	158.692	161.058	-4.949
	1800.00	58.848	356.040	309.742	254.043	83.336	-386.828	157.488	161.231	-4.679
	1900.00	59.094	359.228	312.263	259.940	89.233	-422.593	156.233	161.473	-4.439
	2000.00	59.334	362.265	314.688	265.861	95.154	-458.669	154.929	161.783	-4.225

References

Phase	H / S	C _p
GAS	Tk1	e

PtS

PLATINUM MONOSULFIDE

227.146

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	43.406	55.061	55.061	-83.094	0.000	-99.511	-83.094	-77.541	13.585
	300.00	43.480	55.330	55.062	-83.014	0.080	-99.613	-83.104	-77.506	13.495
	400.00	46.684	68.308	56.810	-78.495	4.599	-105.818	-85.782	-75.479	9.857
	500.00	49.091	78.992	60.209	-73.702	9.392	-113.198	-87.564	-72.717	7.597
	600.00	51.184	88.131	64.119	-68.687	14.407	-121.565	-88.849	-69.616	6.061
	700.00	53.129	96.168	68.134	-63.470	19.624	-130.788	-89.721	-66.338	4.950
	800.00	54.994	103.385	72.097	-58.064	25.030	-140.772	-90.504	-62.945	4.110
	900.00	56.814	109.968	75.944	-52.473	30.621	-151.444	-144.003	-58.303	3.384
	1000.00	58.605	116.046	79.654	-46.702	36.392	-162.748	-143.002	-48.833	2.551
	1100.00	60.378	121.715	83.223	-40.753	42.341	-174.640	-141.882	-39.470	1.874
	1200.00	62.138	127.044	86.655	-34.627	48.467	-187.080	-140.645	-30.213	1.315
	1300.00	63.889	132.087	89.958	-28.325	54.769	-200.039	-139.295	-21.064	0.846
	1400.00	65.633	136.886	93.140	-21.849	61.245	-213.489	-137.829	-12.024	0.449
	1500.00	67.373	141.474	96.210	-15.199	67.895	-227.409	-136.244	-3.092	0.108

References

Phase	H / S	C _p
SOL	Tk1,Mi1	Mi1

PtS2

PLATINUM DISULFIDE

259.212

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	65.889	74.684	74.684	-110.458	0.000	-132.725	-110.458	-101.198	17.729
	300.00	66.009	75.092	74.686	-110.336	0.122	-132.864	-110.468	-101.140	17.610
	400.00	70.780	94.801	77.340	-103.474	6.984	-141.394	-115.384	-97.778	12.769
	500.00	73.835	110.942	82.495	-96.235	14.223	-151.706	-118.622	-93.043	9.720
	600.00	76.215	124.621	88.405	-88.729	21.729	-163.501	-120.993	-87.685	7.634
	700.00	78.277	136.527	94.447	-81.002	29.456	-176.571	-122.664	-81.997	6.119
	800.00	80.168	147.104	100.380	-73.079	37.379	-190.762	-124.290	-76.079	4.967
	900.00	81.961	156.651	106.111	-64.972	45.486	-205.958	-231.479	-67.648	3.926
	1000.00	83.693	165.376	111.607	-56.689	53.769	-222.065	-229.801	-49.534	2.587
	1100.00	85.384	173.433	116.866	-48.235	62.223	-239.011	-228.019	-31.593	1.500
	1200.00	87.048	180.934	121.896	-39.613	70.845	-256.733	-226.135	-13.818	0.601
	1300.00	88.693	187.966	126.710	-30.826	79.632	-275.182	-224.153	3.795	-0.152
	1400.00	90.324	194.599	131.325	-21.875	88.583	-294.313	-222.071	21.252	-0.793
	1500.00	91.944	200.886	135.755	-12.761	97.697	-314.090	-219.886	38.557	-1.343

References

Phase	H / S	C _p
SOL	Tk1,Mi1	Mi1

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [—]
SOL	298.15	211.670	336.812	336.812	-242.672	0.000	-343.092	-242.672	-230.634	40.406
	300.00	211.815	338.122	336.816	-242.280	0.392	-343.717	-242.707	-230.559	40.144
	400.00	219.660	400.132	345.218	-220.707	21.965	-380.759	-244.885	-226.196	29.538
	500.00	227.505	449.990	361.343	-198.348	44.324	-423.343	-271.127	-220.890	23.076
	600.00	235.350	492.163	379.718	-175.206	67.466	-470.503	-275.669	-210.408	18.318
	700.00	243.195	529.031	398.469	-151.278	91.394	-521.600	-279.690	-199.206	14.865
	800.00	251.040	562.017	416.885	-126.567	116.105	-576.180	-283.189	-187.463	12.240
	900.00	258.885	592.039	434.703	-101.070	141.602	-633.905	-286.164	-175.313	10.175
	1000.00	266.730	619.721	451.838	-74.790	167.882	-694.510	-288.617	-162.860	8.507
	1100.00	274.575	645.511	468.286	-47.724	194.948	-757.786	-503.794	-130.370	6.191

References

Phase	H / S	C _p
SOL	Mi1	Mi1

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-A	298.15	31.965	51.463	51.463	0.000	0.000	-15.344	0.000	0.000	0.000
	300.00	32.010	51.661	51.464	0.059	0.059	-15.439	0.000	0.000	0.000
	395.00	34.308	60.769	52.644	3.209	3.209	-20.794	0.000	0.000	0.000
SOL-B	395.00	33.463	69.242	52.644	6.556	6.556	-20.794	0.000	0.000	0.000
SOL-C	480.00	34.741	77.223	56.194	10.094	10.094	-26.973	0.000	0.000	0.000
SOL-D	588.00	37.656	85.689	60.757	14.660	14.660	-35.725	0.000	0.000	0.000
S.-D1	730.00	37.656	93.950	66.427	20.091	20.091	-48.492	0.000	0.000	0.000
SOL-E	753.00	35.146	97.563	67.286	22.798	22.798	-50.666	0.000	0.000	0.000
LIQ	913.00	41.840	107.451	73.204	31.267	31.267	-66.836	0.000	0.000	0.000
	1000.00	41.840	111.259	76.352	34.907	34.907	-76.352	0.000	0.000	0.000
	1100.00	41.840	115.247	79.709	39.091	39.091	-87.680	0.000	0.000	0.000
	1200.00	41.840	118.887	82.825	43.275	43.275	-99.390	0.000	0.000	0.000
	1300.00	41.840	122.236	85.729	47.459	47.459	-111.448	0.000	0.000	0.000
	1400.00	41.840	125.337	88.449	51.643	51.643	-123.829	0.000	0.000	0.000
	1500.00	41.840	128.223	91.006	55.827	55.827	-136.508	0.000	0.000	0.000
	1600.00	41.840	130.924	93.417	60.011	60.011	-149.467	0.000	0.000	0.000
	1700.00	41.840	133.460	95.699	64.195	64.195	-162.688	0.000	0.000	0.000
	1800.00	41.840	135.852	97.864	68.379	68.379	-176.154	0.000	0.000	0.000
	1900.00	41.840	138.114	99.923	72.563	72.563	-189.854	0.000	0.000	0.000
	2000.00	41.840	140.260	101.887	76.747	76.747	-203.773	0.000	0.000	0.000
	2100.00	41.840	142.301	103.763	80.931	80.931	-217.902	0.000	0.000	0.000
	2200.00	41.840	144.248	105.559	85.115	85.115	-232.230	0.000	0.000	0.000
	2300.00	41.840	146.108	107.282	89.299	89.299	-246.749	0.000	0.000	0.000
	2400.00	41.840	147.888	108.937	93.483	93.483	-261.449	0.000	0.000	0.000
	2500.00	41.840	149.596	110.530	97.667	97.667	-276.324	0.000	0.000	0.000

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
LIQ	2600.00	41.840	151.237	112.064	101.851	101.851	-291.366	0.000	0.000	0.000
	2700.00	41.840	152.816	113.544	106.035	106.035	-306.570	0.000	0.000	0.000
	2800.00	41.840	154.338	114.974	110.219	110.219	-321.928	0.000	0.000	0.000
	2900.00	41.840	155.806	116.357	114.403	114.403	-337.435	0.000	0.000	0.000
	3000.00	41.840	157.225	117.696	118.587	118.587	-353.087	0.000	0.000	0.000
	3100.00	41.840	158.597	118.993	122.771	122.771	-368.879	0.000	0.000	0.000
	3200.00	41.840	159.925	120.252	126.955	126.955	-384.805	0.000	0.000	0.000
	3300.00	41.840	161.213	121.473	131.139	131.139	-400.862	0.000	0.000	0.000
	3400.00	41.840	162.462	122.661	135.323	135.323	-417.046	0.000	0.000	0.000
	3498.00	41.840	163.650	123.793	139.423	139.423	-433.026	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL-A	Hu1	Hu1	
SOL-B	Hu1	Hu1	
SOL-C	Hu1	Hu1	
SOL-D	Hu1	Hu1	
S.-D1	Hu1	Hu1	
SOL-E	Hu1	Hu1	
LIQ	Hu1	Hu1	Hu1 BPT= 3498., L= 260.01 kJ

Pu[g]

PLUTONIUM (GAS)

244.064

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
GAS	298.15	20.853	177.164	177.164	351.874	0.000	299.053	351.874	314.396	-55.081
	300.00	20.864	177.293	177.164	351.913	0.039	298.725	351.853	314.164	-54.701
	400.00	21.355	183.355	177.988	354.021	2.147	280.679	347.297	301.821	-39.414
	500.00	22.558	188.235	179.563	356.210	4.336	262.093	345.412	290.625	-30.361
	600.00	24.367	192.501	181.370	358.553	6.679	243.052	343.441	279.810	-24.360
	700.00	26.461	196.412	183.243	361.093	9.219	223.604	342.215	269.305	-20.096
	800.00	28.627	200.087	185.121	363.847	11.973	203.777	339.397	259.080	-16.916
	900.00	30.768	203.585	186.979	366.819	14.945	183.592	338.854	249.075	-14.456
	1000.00	32.784	206.932	188.809	369.997	18.123	163.065	335.090	239.417	-12.506
	1100.00	34.783	210.150	190.603	373.375	21.501	142.210	334.285	229.891	-10.917
	1200.00	36.763	213.262	192.362	376.953	25.079	121.039	333.678	220.429	-9.595
	1300.00	38.696	216.281	194.087	380.726	28.852	99.561	333.268	211.009	-8.478
	1400.00	40.542	219.217	195.777	384.689	32.815	77.786	333.046	201.614	-7.522
	1500.00	42.266	222.074	197.436	388.831	36.957	55.720	333.004	192.229	-6.694
	1600.00	43.839	224.852	199.063	393.137	41.263	33.373	333.127	182.841	-5.969
	1700.00	45.233	227.553	200.660	397.593	45.719	10.753	333.398	173.440	-5.329
	1800.00	46.428	230.173	202.227	402.177	50.303	-12.134	333.798	164.020	-4.760
	1900.00	47.407	232.711	203.765	406.871	54.997	-35.279	334.308	154.574	-4.250
	2000.00	48.156	235.162	205.274	411.651	59.777	-58.674	334.904	145.100	-3.790
	2100.00	48.721	237.527	206.754	416.497	64.623	-82.309	335.567	135.593	-3.373
	2200.00	49.027	239.801	208.205	421.387	69.513	-106.176	336.272	126.054	-2.993
	2300.00	49.133	241.984	209.626	426.296	74.422	-130.266	336.997	116.483	-2.645
	2400.00	49.083	244.074	211.018	431.208	79.334	-154.570	337.725	106.880	-2.326
	2500.00	48.914	246.075	212.381	436.109	84.235	-179.078	338.442	97.246	-2.032
	2600.00	48.657	247.988	213.714	440.988	89.114	-203.782	339.137	87.585	-1.760
	2700.00	48.335	249.819	215.017	445.838	93.964	-228.673	339.803	77.897	-1.507
	2800.00	47.969	251.570	216.292	450.654	98.780	-253.743	340.435	68.185	-1.272
	2900.00	47.574	253.247	217.537	455.431	103.557	-278.984	341.028	58.451	-1.053
	3000.00	47.166	254.853	218.755	460.168	108.294	-304.390	341.581	48.697	-0.848
	3100.00	46.756	256.393	219.944	464.864	112.990	-329.953	342.093	38.926	-0.656
	3200.00	46.354	257.871	221.106	469.520	117.646	-355.666	342.565	29.139	-0.476
	3300.00	45.969	259.291	222.242	474.135	122.261	-381.525	342.997	19.338	-0.306
	3400.00	45.606	260.658	223.352	478.714	126.840	-407.523	343.391	9.524	-0.146
	3500.00	45.274	261.975	224.437	483.258	131.384	-433.655	0.000	0.000	0.000
	3600.00	44.976	263.246	225.497	487.770	135.896	-459.916	0.000	0.000	0.000
	3700.00	44.719	264.475	226.534	492.254	140.380	-486.303	0.000	0.000	0.000
	3800.00	44.505	265.664	227.548	496.715	144.841	-512.810	0.000	0.000	0.000
	3900.00	44.339	266.818	228.541	501.157	149.283	-539.434	0.000	0.000	0.000
	4000.00	44.223	267.939	229.512	505.585	153.711	-566.172	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	107.867	192.882	192.882	-793.286	0.000	-850.794	-793.286	-767.378	134.441
	300.00	107.905	193.550	192.884	-793.086	0.200	-851.151	-793.356	-767.217	133.584
	400.00	109.997	224.879	197.142	-782.191	11.095	-872.143	-840.848	-749.276	97.845
	500.00	112.089	249.649	205.251	-771.087	22.199	-895.911	-839.356	-726.600	75.907
	600.00	114.181	270.270	214.416	-759.773	33.513	-921.935	-837.934	-704.225	61.308
	700.00	116.273	288.028	223.692	-748.251	45.035	-949.870	-835.780	-682.108	50.899
	800.00	118.365	303.691	232.732	-736.519	56.767	-979.471	-835.242	-660.193	43.106
	900.00	120.457	317.753	241.410	-724.578	68.708	-1010.555	-832.452	-638.477	37.056
	954.00	121.587	324.805	245.933	-718.042	75.244	-1027.906	-833.983	-626.751	34.317
LIQ			58.769		56.066					
	954.00	138.072	383.574	245.933	-661.976	131.310	-1027.906	-777.917	-626.751	34.317
	1000.00	138.072	390.076	252.415	-655.625	137.661	-1045.701	-776.090	-619.506	32.360
	1100.00	138.072	403.236	265.537	-641.818	151.468	-1085.377	-772.126	-604.039	28.683
	1200.00	138.072	415.249	277.520	-628.011	165.275	-1126.310	-768.172	-588.933	25.636
	1300.00	138.072	426.301	288.545	-614.203	179.083	-1168.395	-764.227	-574.157	23.070
	1400.00	138.072	436.533	298.755	-600.396	192.890	-1211.543	-760.291	-559.683	20.882
	1500.00	138.072	446.059	308.261	-586.589	206.697	-1255.678	-756.364	-545.491	18.996

References

Phase	H / S	C _p
SOL	Pa2/Oe1	Oe1
LIQ	Pa2	Oe1

Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	47.692	72.718	72.718	–47.698	0.000	–69.379	–47.698	–52.529	9.203
	300.00	47.768	73.013	72.719	–47.610	0.088	–69.514	–47.683	–52.559	9.151
	400.00	49.642	87.092	74.626	–42.711	4.987	–77.548	–50.362	–54.252	7.085
	500.00	49.889	98.204	78.271	–37.731	9.967	–86.833	–50.627	–55.245	5.771
	600.00	50.249	107.324	82.375	–32.729	14.969	–97.123	–51.329	–56.151	4.888
	700.00	51.319	115.139	86.510	–27.658	20.040	–108.255	–51.589	–56.935	4.249
	800.00	53.347	122.112	90.531	–22.433	25.265	–120.123	–53.630	–57.562	3.758
	900.00	56.453	128.564	94.402	–16.952	30.746	–132.660	–53.452	–58.062	3.370
	1000.00	60.697	134.721	98.128	–11.104	36.594	–145.826	–56.411	–58.298	3.045
	1100.00	66.115	140.751	101.729	–4.774	42.924	–159.600	–56.191	–58.493	2.778
	1200.00	72.728	146.779	105.232	2.158	49.856	–173.976	–55.419	–58.732	2.557
	1300.00	80.549	152.901	108.662	9.812	57.510	–188.959	–53.966	–59.062	2.373
	1400.00	89.585	159.193	112.046	18.309	66.007	–204.562	–51.703	–59.533	2.221
	1500.00	99.844	165.717	115.405	27.770	75.468	–220.805	–48.502	–60.198	2.096
	1600.00	111.327	172.521	118.760	38.318	86.016	–237.715	–44.236	–61.111	1.995
	1700.00	124.039	179.645	122.131	50.076	97.774	–255.320	–38.777	–62.326	1.915
	1800.00	137.979	187.124	125.532	63.167	110.865	–273.655	–32.000	–63.900	1.854

References

Phase	H / S	C _p	Remarks
SOL	Pa3	Pa3	H298 acc. Campbell(1971),Ondracer(1975),Shunk(1969)

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					
SOL	298.15	55.020	100.834	100.834	-28.451	0.000	-58.515	-28.451	-39.748	6.964
	300.00	55.188	101.175	100.835	-28.349	0.102	-58.702	-28.440	-39.818	6.933
	400.00	62.258	118.101	103.095	-22.449	6.002	-69.689	-31.278	-43.650	5.700
	500.00	67.068	132.537	107.576	-15.970	12.481	-82.239	-31.536	-46.762	4.885
	600.00	70.792	145.107	112.806	-9.071	19.380	-96.135	-32.111	-49.800	4.335
	700.00	73.869	156.257	118.232	-1.833	26.618	-111.213	-32.196	-52.741	3.936
	800.00	76.497	166.297	123.623	5.688	34.139	-127.349	-34.095	-55.551	3.627
	900.00	78.779	175.442	128.880	13.455	41.906	-144.443	-33.908	-58.244	3.380
	1000.00	80.778	183.848	133.962	21.435	49.886	-162.413	-37.109	-60.661	3.169
	1100.00	82.536	191.631	138.855	29.602	58.053	-181.191	-37.503	-62.997	2.991
	1200.00	84.080	198.880	143.558	37.935	66.386	-200.721	-37.846	-65.299	2.842
	1300.00	85.437	205.665	148.078	46.412	74.863	-220.952	-38.136	-67.575	2.715
	1400.00	86.625	212.041	152.421	55.017	83.468	-241.840	-38.374	-69.830	2.605
	1500.00	87.663	218.053	156.598	63.732	92.183	-263.348	-38.561	-72.070	2.510
	1600.00	88.566	223.741	160.618	72.545	100.996	-285.440	-38.700	-74.299	2.426
	1700.00	89.351	229.134	164.491	81.441	109.892	-308.086	-38.795	-76.521	2.351
	1800.00	90.031	234.261	168.226	90.411	118.862	-331.258	-38.850	-78.738	2.285
	1900.00	90.622	239.145	171.831	99.445	127.896	-354.930	-38.870	-80.954	2.226
	2000.00	91.136	243.807	175.314	108.533	136.984	-379.080	-38.860	-83.169	2.172
	2100.00	91.588	248.264	178.683	117.670	146.121	-403.685	-38.826	-85.385	2.124
	2200.00	91.991	252.534	181.943	126.849	155.300	-428.726	-38.770	-87.603	2.080
	2300.00	92.358	256.632	185.102	136.067	164.518	-454.186	-38.695	-89.825	2.040
	2400.00	92.702	260.570	188.165	145.320	173.771	-480.047	-38.601	-92.050	2.003

References

Phase	H / S	C _p
SOL	Pa3	Pa3

Pu2C3

DIPLUTONIUM TRICARBIDE

524.161

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
SOL	298.15	114.002	150.001	150.001	-169.452	0.000	-214.175	-169.452	-178.353	31.247
	300.00	114.233	150.707	150.003	-169.241	0.211	-214.453	-169.407	-178.408	31.064
	400.00	121.759	184.784	154.598	-157.378	12.074	-231.291	-173.984	-181.662	23.723
	500.00	125.016	212.338	163.481	-145.023	24.429	-251.192	-173.771	-183.711	19.192
	600.00	127.445	235.347	173.593	-132.400	37.052	-273.608	-174.517	-185.727	16.169
	700.00	130.227	255.193	183.864	-119.522	49.930	-298.157	-174.505	-187.599	13.999
	800.00	133.854	272.808	193.901	-106.326	63.126	-324.572	-178.226	-189.224	12.355
	900.00	138.562	288.834	203.571	-92.715	76.737	-352.666	-177.742	-190.626	11.064
	1000.00	144.475	303.728	212.850	-78.574	90.878	-382.302	-183.842	-191.499	10.003
	1100.00	151.664	317.825	221.757	-63.778	105.674	-413.385	-183.981	-192.253	9.129
	1200.00	160.172	331.376	230.330	-48.197	121.255	-445.849	-183.505	-193.021	8.402
	1300.00	170.025	344.577	238.613	-31.698	137.754	-479.648	-182.250	-193.859	7.789
	1400.00	181.243	357.579	246.647	-14.146	155.306	-514.757	-180.053	-194.827	7.269
	1500.00	193.837	370.505	254.473	4.596	174.048	-551.162	-176.757	-195.991	6.825
	1600.00	207.816	383.454	262.130	24.667	194.119	-588.859	-172.206	-197.414	6.445
	1700.00	223.186	396.507	269.649	46.206	215.658	-627.856	-166.247	-199.164	6.120
	1800.00	239.953	409.732	277.064	69.351	238.803	-668.166	-158.731	-201.310	5.842
	1900.00	258.119	423.186	284.399	94.243	263.695	-709.810	-149.511	-203.918	5.606
	2000.00	277.688	436.917	291.680	121.022	290.474	-752.813	-138.442	-207.060	5.408
	2100.00	298.662	450.967	298.930	149.827	319.279	-797.204	-125.382	-210.803	5.243
	2200.00	321.044	465.372	306.166	180.801	350.253	-843.018	-110.186	-215.218	5.110

References

Phase	H / S	C _p
SOL	Pa3	Pa3

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	102.867	158.992	158.992	-961.483	0.000	-1008.886	-961.483	-893.759	156.583
	300.00	102.909	159.628	158.994	-961.293	0.190	-1009.181	-961.446	-893.339	155.544
	400.00	105.351	189.562	163.059	-950.882	10.601	-1026.707	-962.901	-870.885	113.726
	500.00	107.941	213.347	170.817	-940.218	21.265	-1046.891	-961.667	-848.068	88.597
	600.00	110.589	233.261	179.608	-929.292	32.191	-1069.248	-960.508	-825.499	71.866
	700.00	113.265	250.509	188.532	-918.099	43.384	-1093.455	-958.596	-803.146	59.931
	800.00	115.956	265.809	197.253	-906.638	54.845	-1119.285	-958.266	-780.963	50.992
	900.00	118.655	279.622	205.649	-894.908	66.575	-1146.567	-955.638	-758.955	44.049
	1000.00	121.359	292.263	213.687	-882.907	78.576	-1175.170	-956.191	-736.955	38.495
	1033.00	122.253	296.218	216.261	-878.887	82.596	-1184.881	-955.409	-729.733	36.900
			61.565		63.597					
LIQ	1033.00	133.888	357.783	216.261	-815.290	146.193	-1184.881	-891.812	-729.733	36.900
	1100.00	133.888	366.197	225.140	-806.320	155.163	-1209.137	-889.419	-719.297	34.157
	1200.00	133.888	377.847	237.387	-792.931	168.552	-1246.348	-885.860	-703.988	30.644
	1300.00	133.888	388.564	248.610	-779.542	181.941	-1284.675	-882.315	-688.976	27.683
	1400.00	133.888	398.486	258.965	-766.154	195.329	-1324.034	-878.782	-674.236	25.156
	1500.00	133.888	407.723	268.578	-752.765	208.718	-1364.350	-875.260	-659.749	22.974

References

Phase	H / S	C _p
SOL	Oe1	Oe1
LIQ	Pa2	Oe1

PuF3

PLUTONIUM TRIFLUORIDE

301.059

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	92.647	126.110	126.110	-1552.264	0.000	-1589.864	-1552.264	-1483.825	259.960
	300.00	92.776	126.683	126.112	-1552.092	0.172	-1590.098	-1552.239	-1483.400	258.283
	400.00	98.868	154.250	129.829	-1542.496	9.768	-1604.196	-1554.127	-1460.628	190.738
	500.00	103.496	176.830	137.038	-1532.368	19.896	-1620.783	-1553.118	-1437.412	150.165
	600.00	107.253	196.041	145.310	-1521.825	30.439	-1639.450	-1552.099	-1414.408	123.135
	700.00	110.512	212.824	153.781	-1510.934	41.330	-1659.911	-1550.298	-1391.598	103.842
	800.00	113.472	227.777	162.112	-1499.733	52.531	-1681.954	-1550.079	-1368.943	89.383
	900.00	116.243	241.303	170.172	-1488.246	64.018	-1705.418	-1547.578	-1346.449	78.146
	1000.00	118.892	253.688	177.913	-1476.488	75.776	-1730.177	-1548.283	-1323.947	69.156
	1100.00	121.456	265.141	185.328	-1464.470	87.794	-1756.125	-1546.009	-1301.622	61.809
	1200.00	123.962	275.817	192.429	-1452.199	100.065	-1783.179	-1543.514	-1279.513	55.696
	1300.00	126.424	285.837	199.233	-1439.679	112.585	-1811.267	-1540.798	-1257.622	50.532
	1400.00	128.855	295.295	205.760	-1426.915	125.349	-1840.327	-1537.862	-1235.948	46.114
	1500.00	131.261	304.267	212.030	-1413.909	138.355	-1870.309	-1534.705	-1214.491	42.292
	1600.00	133.650	312.815	218.064	-1400.663	151.601	-1901.167	-1531.328	-1193.253	38.956
	1699.00	136.000	320.908	223.823	-1387.316	164.948	-1932.539	-1527.768	-1172.441	36.046
			32.014		54.392					
LIQ	1699.00	146.440	352.922	223.823	-1332.924	219.340	-1932.539	-1473.376	-1172.441	36.046
	1700.00	146.440	353.009	223.899	-1332.777	219.487	-1932.892	-1473.329	-1172.264	36.019
	1800.00	146.440	361.379	231.306	-1318.133	234.131	-1968.615	-1468.588	-1154.691	33.508
	1900.00	146.440	369.297	238.362	-1303.489	248.775	-2005.153	-1463.862	-1137.381	31.269
	2000.00	146.440	376.808	245.098	-1288.845	263.419	-2042.461	-1459.151	-1120.320	29.260

References

Phase	H / S	C _p
SOL	Pa2	Pa2
LIQ	Oe1	Oe1

320.058

PLUTONIUM TETRAFLUORIDE

PuF4

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	116.193	147.252	147.252	-1778.200	0.000	-1822.103	-1778.200	-1685.833	295.351
	300.00	116.368	147.971	147.254	-1777.985	0.215	-1822.376	-1778.160	-1685.260	293.430
	400.00	122.867	182.450	151.911	-1765.984	12.216	-1838.964	-1779.251	-1654.588	216.067
	500.00	126.449	210.283	160.892	-1753.505	24.695	-1858.646	-1777.572	-1623.662	169.623
	600.00	128.883	233.564	171.117	-1740.732	37.468	-1880.870	-1776.059	-1593.066	138.689
	700.00	130.775	253.578	181.501	-1727.746	50.454	-1905.250	-1773.939	-1562.734	116.613
	800.00	132.378	271.147	191.630	-1714.586	63.614	-1931.504	-1773.565	-1532.591	100.068
	900.00	133.813	286.823	201.352	-1701.276	76.924	-1959.417	-1771.064	-1502.618	87.210
	1000.00	135.143	300.992	210.619	-1687.827	90.373	-1988.819	-1771.918	-1472.630	76.922
	1100.00	136.406	313.932	219.431	-1674.249	103.951	-2019.574	-1769.937	-1442.797	68.513
	1200.00	137.622	325.853	227.809	-1660.548	117.652	-2051.571	-1767.876	-1413.147	61.513
	1300.00	138.805	336.916	235.782	-1646.726	131.474	-2084.716	-1765.732	-1383.673	55.597
	1310.00	138.922	337.980	236.558	-1645.338	132.862	-2088.091	-1765.513	-1380.735	55.055
			32.578		42.677					
LIQ	1310.00	171.544	370.558	236.558	-1602.661	175.539	-2088.091	-1722.836	-1380.735	55.055
	1400.00	171.544	381.956	245.543	-1587.222	190.978	-2121.960	-1717.936	-1357.396	50.645
	1500.00	171.544	393.791	255.036	-1570.067	208.133	-2160.754	-1712.520	-1331.832	46.379

References

Phase	H / S	C _p
SOL	Pa2	Pa2
LIQ	Oe1	Oe1

358.055

PLUTONIUM HEXAFLUORIDE

PuF6

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	167.364	221.752	221.752	-1799.120	0.000	-1865.235	-1799.120	-1668.502	292.315
	300.00	167.855	222.789	221.755	-1798.810	0.310	-1865.647	-1799.043	-1667.691	290.371
	324.74	174.413	236.346	222.354	-1794.576	4.544	-1871.327	-1797.948	-1656.902	266.514
			57.412		18.644					
LIQ	324.74	188.280	293.759	222.354	-1775.932	23.188	-1871.327	-1779.304	-1656.902	266.514
	400.00	188.280	333.004	239.609	-1761.762	37.358	-1894.964	-1778.301	-1628.970	212.722

References

Phase	H / S	C _p
SOL	Pa2	Oe1
LIQ	Oe1	Oe1

PuF6[g]

PLUTONIUM HEXAFLUORIDE (GAS)

358.055

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	129.420	369.532	369.532	-1748.912	0.000	-1859.088	-1748.912	-1662.354	291.238
	300.00	129.677	370.333	369.534	-1748.672	0.240	-1859.772	-1748.905	-1661.817	289.348
	400.00	139.948	409.196	374.763	-1735.139	13.773	-1898.817	-1751.677	-1632.823	213.225
	500.00	145.673	441.097	384.937	-1720.832	28.080	-1941.380	-1751.534	-1603.170	167.482
	600.00	149.106	467.984	396.597	-1706.079	42.833	-1986.870	-1751.515	-1573.543	136.989
	700.00	151.306	491.146	408.488	-1691.051	57.861	-2034.854	-1750.903	-1543.929	115.209
	800.00	152.793	511.453	420.116	-1675.842	73.070	-2085.004	-1752.084	-1514.285	98.873
	900.00	153.842	529.514	431.286	-1660.507	88.405	-2137.070	-1751.207	-1484.613	86.165
	1000.00	154.608	545.764	441.935	-1645.083	103.829	-2190.847	-1753.765	-1454.740	75.988
	1100.00	155.181	560.528	452.055	-1629.592	119.320	-2246.173	-1753.578	-1424.847	67.660
	1200.00	155.622	574.050	461.666	-1614.051	134.861	-2302.911	-1753.406	-1394.970	60.721
	1300.00	155.966	586.521	470.797	-1598.471	150.441	-2360.948	-1753.249	-1365.107	54.851
	1400.00	156.239	598.090	479.481	-1582.860	166.052	-2420.186	-1753.111	-1335.255	49.819
	1500.00	156.459	608.877	487.752	-1567.225	181.687	-2480.540	-1752.991	-1305.412	45.458
	1600.00	156.638	618.980	495.641	-1551.570	197.342	-2541.938	-1752.889	-1275.577	41.643
	1700.00	156.785	628.481	503.179	-1535.898	213.014	-2604.316	-1752.807	-1245.748	38.277
	1800.00	156.907	637.446	510.391	-1520.213	228.699	-2667.616	-1752.743	-1215.923	35.285
	1900.00	157.009	645.932	517.304	-1504.518	244.394	-2731.789	-1752.700	-1186.100	32.608
	2000.00	157.094	653.988	523.938	-1488.812	260.100	-2796.789	-1752.676	-1156.280	30.199

References

Phase	H / S	C _p
GAS	Pa2	Pa2

PuH2

PLUTONIUM DIHYDRIDE

246.080

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	39.018	59.831	59.831	-139.327	0.000	-157.166	-139.327	-102.860	18.021
	300.00	39.113	60.073	59.832	-139.255	0.072	-157.277	-139.367	-102.633	17.870
	400.00	43.043	71.911	61.419	-135.130	4.197	-163.895	-144.814	-90.026	11.756
	500.00	45.727	81.817	64.535	-130.686	8.641	-171.595	-147.366	-76.076	7.948
	600.00	47.921	90.353	68.143	-126.001	13.326	-180.213	-149.924	-61.619	5.364
	700.00	49.883	97.890	71.864	-121.109	18.218	-189.632	-151.736	-46.756	3.489
	800.00	51.722	104.672	75.548	-116.028	23.299	-199.766	-155.180	-31.526	2.058
	900.00	53.489	110.866	79.133	-110.767	28.560	-210.547	-156.408	-15.994	0.928
	1000.00	55.212	116.591	82.596	-105.332	33.995	-221.923	-160.919	-0.035	0.002

References

Phase	H / S	C _p
SOL	Oe1	Oe1

247.088		PLUTONIUM TRIHYDRIDE								PuH3
Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	43.242	64.852	64.852	-138.072	0.000	-157.408	-138.072	-83.621	14.650
	300.00	43.304	65.120	64.853	-137.992	0.080	-157.528	-138.131	-83.282	14.501
	400.00	46.652	78.036	66.591	-133.494	4.578	-164.709	-144.657	-64.476	8.420
	500.00	49.999	88.806	69.985	-128.662	9.410	-173.064	-148.282	-44.052	4.602

References

Phase	H / S	C _p
SOL	Oe1	Oe1

624.778		PLUTONIUM TRIIODIDE								PuI3
Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	111.825	214.221	214.221	-579.902	0.000	-643.772	-579.902	-576.487	100.998
	300.00	111.863	214.913	214.223	-579.695	0.207	-644.169	-579.905	-576.465	100.372
	400.00	113.922	247.376	218.635	-568.406	11.496	-667.356	-607.739	-574.386	75.007
	500.00	115.980	273.018	227.035	-556.911	22.991	-693.420	-672.608	-559.852	58.487
	600.00	118.039	294.345	236.525	-545.210	34.692	-721.817	-670.848	-537.508	46.794
	700.00	120.098	312.696	246.126	-533.303	46.599	-752.190	-668.351	-515.479	38.466
	800.00	122.156	328.867	255.477	-521.190	58.712	-784.284	-667.469	-493.702	32.235
	900.00	124.215	343.374	264.451	-508.872	71.030	-817.908	-664.336	-472.168	27.404
	1000.00	126.273	356.568	273.013	-496.347	83.555	-852.915	-664.435	-450.694	23.542
	1050.00	127.302	362.753	277.140	-490.008	89.894	-870.899	-663.032	-440.041	21.891
LIQ			47.817		50.208					
	1050.00	142.256	410.571	277.140	-439.800	140.102	-870.899	-612.824	-440.041	21.891
	1100.00	142.256	417.188	283.357	-432.687	147.215	-891.594	-610.651	-431.865	20.508
	1200.00	142.256	429.566	295.032	-418.462	161.440	-933.941	-606.311	-415.803	18.099
	1300.00	142.256	440.953	305.825	-404.236	175.666	-977.474	-601.981	-400.103	16.076
	1400.00	142.256	451.495	315.858	-390.010	189.892	-1022.103	-597.660	-384.736	14.355
	1500.00	142.256	461.310	325.232	-375.785	204.117	-1067.749	-593.348	-369.678	12.873

References

Phase	H / S	C _p
SOL	Pa2	Oe1
LIQ	Oe1	Oe1

PuN

PLUTONIUM NITRIDE

258.071

Phase	T [K]	C _p [————— J / (K mol)]	S	-(G-H298)/T [—————]	H	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [—]
SOL	298.15	49.600	64.810	64.810	-299.198	0.000	-318.521	-299.198	-274.613	48.111
	300.00	49.628	65.117	64.811	-299.106	0.092	-318.641	-299.192	-274.461	47.788
	400.00	51.170	79.605	66.776	-294.066	5.132	-325.908	-302.276	-266.216	34.764
	500.00	52.713	91.189	70.538	-288.872	10.326	-334.467	-302.625	-257.206	26.870
	600.00	54.255	100.936	74.813	-283.524	15.674	-344.086	-303.083	-248.122	21.601
	700.00	55.797	109.416	79.163	-278.021	21.177	-354.612	-302.867	-238.977	17.833
	800.00	57.339	116.967	83.425	-272.364	26.834	-365.938	-304.338	-229.752	15.001
	900.00	58.881	123.810	87.538	-266.553	32.645	-377.982	-303.630	-220.470	12.796
	1000.00	60.423	130.093	91.483	-260.588	38.610	-390.681	-306.226	-210.975	11.020
	1100.00	61.965	135.924	95.261	-254.469	44.729	-403.986	-305.940	-201.463	9.567
	1200.00	63.508	141.382	98.880	-248.195	51.003	-417.854	-305.524	-191.982	8.357
	1300.00	65.050	146.526	102.349	-241.767	57.431	-432.252	-304.977	-182.542	7.335
	1400.00	66.592	151.404	105.680	-235.185	64.013	-447.150	-304.296	-173.149	6.460
	1500.00	68.134	156.051	108.884	-228.449	70.749	-462.525	-303.478	-163.809	5.704
	1600.00	69.676	160.497	111.972	-221.558	77.640	-478.354	-302.521	-154.528	5.045

References

Phase	H / S	C _p
SOL	Pa3	Pa3

260.064

PLUTONIUM OXIDE

PuO

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	51.269	70.710	70.710	-564.840	0.000	-585.922	-564.840	-539.996	94.605
	300.00	51.323	71.027	70.711	-564.745	0.095	-586.053	-564.831	-539.842	93.995
	400.00	53.932	86.162	72.757	-559.478	5.362	-593.943	-567.714	-531.539	69.412
	500.00	56.087	98.435	76.703	-553.974	10.866	-603.191	-567.814	-522.528	54.588
	600.00	57.951	108.829	81.212	-548.270	16.570	-613.567	-568.004	-513.496	44.704
	700.00	59.604	117.889	85.818	-542.391	22.449	-624.913	-567.518	-504.449	37.642
	800.00	61.092	125.947	90.340	-536.354	28.486	-637.112	-568.723	-495.359	32.344
	900.00	62.438	133.222	94.707	-530.177	34.663	-650.076	-567.762	-486.245	28.221
	1000.00	63.659	139.864	98.895	-523.871	40.969	-663.735	-570.129	-476.946	24.913
	1100.00	64.767	145.984	102.902	-517.449	47.391	-678.032	-569.646	-467.650	22.207
	1200.00	65.772	151.664	106.731	-510.921	53.919	-692.918	-569.076	-458.402	19.954
	1300.00	66.679	156.965	110.394	-504.298	60.542	-708.352	-568.429	-449.205	18.049
	1400.00	67.497	161.937	113.900	-497.588	67.252	-724.300	-567.710	-440.061	16.419
	1500.00	68.231	166.619	117.260	-490.801	74.039	-740.730	-566.927	-430.970	15.008
	1600.00	68.886	171.044	120.484	-483.945	80.895	-757.615	-566.088	-421.933	13.775
	1700.00	69.468	175.238	123.583	-477.026	87.814	-774.931	-565.200	-412.950	12.688
	1800.00	69.981	179.223	126.564	-470.053	94.787	-792.655	-564.269	-404.021	11.724
	1900.00	70.432	183.019	129.436	-463.032	101.808	-810.769	-563.302	-395.145	10.863
	2000.00	70.824	186.642	132.207	-455.969	108.871	-829.253	-562.304	-386.320	10.090
	2100.00	71.163	190.106	134.882	-448.869	115.971	-848.092	-561.281	-377.546	9.391
	2173.00	71.380	192.542	136.778	-443.666	121.174	-862.059	-560.521	-371.172	8.922

References

Phase	H / S	C _p	Remarks
SOL	Pa1	Pa1	Pa1 MPT= 2173.

PuO2

PLUTONIUM DIOXIDE

276.063

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	66.242	66.128	66.128	-1055.832	0.000	-1075.548	-1055.832	-999.040	175.028
	300.00	66.583	66.539	66.129	-1055.709	0.123	-1075.671	-1055.823	-998.687	173.887
	400.00	78.237	87.548	68.915	-1048.379	7.453	-1083.398	-1058.128	-979.733	127.940
	500.00	83.347	105.622	74.497	-1040.270	15.562	-1093.080	-1057.152	-960.286	100.320
	600.00	86.069	121.081	81.005	-1031.787	24.045	-1104.435	-1056.143	-941.051	81.926
	700.00	87.776	134.485	87.709	-1023.089	32.743	-1117.228	-1054.465	-922.000	68.800
	800.00	89.024	146.291	94.308	-1014.246	41.586	-1131.279	-1054.532	-903.075	58.965
	900.00	90.076	156.838	100.681	-1005.290	50.542	-1146.444	-1052.496	-884.265	51.321
	1000.00	91.067	166.380	106.781	-996.233	59.599	-1162.613	-1053.843	-865.386	45.203
	1100.00	92.072	175.106	112.601	-987.076	68.756	-1179.693	-1052.379	-846.611	40.202
	1200.00	93.139	183.163	118.150	-977.817	78.015	-1197.612	-1050.852	-827.971	36.041
	1300.00	94.295	190.663	123.443	-968.446	87.386	-1216.307	-1049.248	-809.462	32.525
	1400.00	95.560	197.696	128.498	-958.954	96.878	-1235.729	-1047.554	-791.080	29.516
	1500.00	96.945	204.336	133.334	-949.330	106.502	-1255.833	-1045.755	-772.823	26.912
	1600.00	98.459	210.640	137.971	-939.561	116.271	-1276.585	-1043.837	-754.689	24.638
	1700.00	100.109	216.658	142.424	-929.633	126.199	-1297.952	-1041.786	-736.679	22.635
	1800.00	101.900	222.430	146.709	-919.534	136.298	-1319.908	-1039.586	-718.795	20.859
	1900.00	103.835	227.991	150.842	-909.248	146.584	-1342.431	-1037.224	-701.036	19.273
	2000.00	105.916	233.369	154.834	-898.762	157.070	-1365.500	-1034.685	-683.407	17.849
	2100.00	108.146	238.590	158.699	-888.060	167.772	-1389.100	-1031.952	-665.910	16.564
	2200.00	110.526	243.675	162.446	-877.128	178.704	-1413.214	-1029.012	-648.547	15.398
	2300.00	113.057	248.644	166.086	-865.950	189.882	-1437.831	-1025.849	-631.323	14.338
	2400.00	115.741	253.512	169.628	-854.512	201.320	-1462.939	-1022.447	-614.242	13.369
	2500.00	118.579	258.293	173.079	-842.797	213.035	-1488.530	-1018.791	-597.308	12.480
	2600.00	118.826	262.954	176.447	-830.914	224.918	-1514.594	-1014.989	-580.523	11.663
	2700.00	118.826	267.438	179.734	-819.032	236.800	-1541.115	-1011.207	-563.885	10.909
	2715.00	118.826	268.097	180.221	-817.249	238.583	-1545.132	-1010.642	-561.402	10.801
LIQ			27.739		75.312					
	2715.00	104.600	295.836	180.221	-741.937	313.895	-1545.132	-935.330	-561.402	10.801
	2800.00	104.600	299.060	183.780	-733.046	322.786	-1570.415	-933.344	-549.726	10.255
	2900.00	104.600	302.731	187.819	-722.586	333.246	-1600.506	-931.026	-536.066	9.656
	3000.00	104.600	306.277	191.708	-712.126	343.706	-1630.957	-928.727	-522.486	9.097

References

Phase	H / S	C _p
SOL	Pa1	Pa1,e
LIQ	Pa1	e

536.127

DIPLUTONIUM TRIOXIDE (ALPHA)

Pu2O3

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	133.249	153.553	153.553	-1799.120	0.000	-1844.902	-1799.120	-1722.467	301.769
	300.00	133.659	154.378	153.555	-1798.873	0.247	-1845.187	-1799.073	-1721.992	299.825
	400.00	148.475	195.131	159.011	-1784.672	14.448	-1862.725	-1802.658	-1696.657	221.561
	500.00	156.584	229.200	169.739	-1769.389	29.731	-1883.989	-1800.112	-1670.532	174.519
	600.00	162.280	258.276	182.131	-1753.433	45.687	-1908.399	-1797.523	-1644.943	143.205
	700.00	166.819	283.643	194.859	-1736.971	62.149	-1935.521	-1793.475	-1619.829	120.873
	800.00	170.670	306.176	207.391	-1720.092	79.028	-1965.033	-1792.746	-1595.077	104.148
	900.00	174.041	326.477	219.514	-1702.853	96.267	-1996.682	-1787.644	-1570.672	91.159
	1000.00	177.040	344.972	231.148	-1685.296	113.824	-2030.268	-1789.164	-1546.252	80.768
	1100.00	179.730	361.974	242.279	-1667.455	131.665	-2065.627	-1784.955	-1522.163	72.281
	1200.00	182.150	377.718	252.918	-1649.359	149.761	-2102.621	-1780.551	-1498.465	65.227
	1300.00	184.329	392.386	263.088	-1631.033	168.087	-2141.135	-1775.967	-1475.143	59.272
	1400.00	186.288	406.119	272.820	-1612.501	186.619	-2181.067	-1771.223	-1452.180	54.181
	1500.00	188.047	419.033	282.141	-1593.783	205.337	-2222.331	-1766.334	-1429.561	49.782
	1600.00	189.620	431.220	291.081	-1574.898	224.222	-2264.850	-1761.318	-1407.272	45.943
	1700.00	191.022	442.758	299.667	-1555.864	243.256	-2308.554	-1756.190	-1385.301	42.565
	1800.00	192.267	453.713	307.923	-1536.699	262.421	-2353.382	-1750.966	-1363.634	39.572
	1900.00	193.367	464.138	315.873	-1517.416	281.704	-2399.279	-1745.661	-1342.260	36.901
	2000.00	194.334	474.082	323.537	-1498.030	301.090	-2446.194	-1740.287	-1321.167	34.505

References

Phase	H / S	C _p
SOL	Pa1	Pa1

Pu2O3[B]

DIPLUTONIUM TRIOXIDE (BETA)

536.127

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	131.157	138.909	138.909	-1715.440	0.000	-1756.856	-1715.440	-1634.421	286.344
	300.00	131.567	139.721	138.911	-1715.197	0.243	-1757.113	-1715.397	-1633.919	284.491
	400.00	146.383	179.872	144.285	-1701.205	14.235	-1773.154	-1719.191	-1607.086	209.864
	500.00	154.492	213.474	154.858	-1686.132	29.308	-1792.869	-1716.854	-1579.412	165.000
	600.00	160.188	242.169	167.076	-1670.385	45.055	-1815.686	-1714.475	-1552.231	135.134
	700.00	164.727	267.214	179.630	-1654.132	61.308	-1841.181	-1710.635	-1525.489	113.833
	800.00	168.578	289.467	191.995	-1637.462	77.978	-1869.036	-1710.116	-1499.080	97.880
	900.00	171.949	309.522	203.957	-1620.432	95.008	-1899.002	-1705.223	-1472.991	85.490
	1000.00	174.948	327.796	215.441	-1603.085	112.355	-1930.881	-1706.953	-1446.865	75.576
	1100.00	177.638	344.599	226.429	-1585.453	129.987	-1964.512	-1702.953	-1421.048	67.480
	1200.00	180.058	360.161	236.933	-1567.566	147.874	-1999.760	-1698.757	-1395.604	60.749
	1300.00	182.237	374.661	246.976	-1549.449	165.991	-2036.509	-1694.383	-1370.517	55.068
	1400.00	184.196	388.239	256.586	-1531.126	184.314	-2074.661	-1689.848	-1345.773	50.211
	1500.00	185.955	401.009	265.793	-1512.617	202.823	-2114.130	-1685.168	-1321.359	46.014
	1600.00	187.528	413.061	274.624	-1493.941	221.499	-2154.839	-1680.361	-1297.261	42.351
	1700.00	188.930	424.473	283.106	-1475.117	240.323	-2196.721	-1675.443	-1273.468	39.129
	1800.00	190.175	435.308	291.263	-1456.160	259.280	-2239.714	-1670.428	-1249.966	36.273
	1900.00	191.275	445.620	299.118	-1437.087	278.353	-2283.765	-1665.332	-1226.746	33.726
	2000.00	192.242	455.456	306.691	-1417.910	297.530	-2328.822	-1660.167	-1203.796	31.440

References

Phase	H / S	C _p
SOL	Pa1	Pa1

PuOBr

PLUTONIUM BROMIDE OXIDE

339.968

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	87.791	119.244	119.244	-888.682	0.000	-924.235	-888.682	-855.618	149.901
	300.00	87.835	119.787	119.246	-888.520	0.162	-924.456	-888.676	-855.413	148.941
	400.00	90.224	145.383	122.719	-879.617	9.065	-937.770	-905.164	-841.458	109.883
	500.00	92.613	165.772	129.358	-870.475	18.207	-953.361	-903.472	-825.772	86.268
	600.00	95.002	182.869	136.889	-861.094	27.588	-970.815	-901.844	-810.427	70.554
	700.00	97.391	197.693	144.539	-851.474	37.208	-989.859	-899.485	-795.374	59.352
	800.00	99.780	210.854	152.021	-841.616	47.066	-1010.299	-898.742	-780.554	50.965
	900.00	102.169	222.744	159.229	-831.518	57.164	-1031.988	-895.740	-765.958	44.455
	1000.00	104.558	233.632	166.132	-821.182	67.500	-1054.814	-895.960	-751.410	39.250
	1100.00	106.947	243.710	172.732	-810.607	78.075	-1078.687	-893.209	-737.087	35.001
	1200.00	109.336	253.118	179.043	-799.793	88.889	-1103.534	-890.243	-723.023	31.472
	1300.00	111.725	261.964	185.085	-788.740	99.942	-1129.292	-887.059	-709.215	28.497
	1400.00	114.114	270.331	190.878	-777.448	111.234	-1155.911	-883.653	-695.662	25.955
	1500.00	116.503	278.285	196.442	-765.917	122.765	-1183.345	-880.025	-682.359	23.762

References

Phase	H / S	C _p
SOL	Oe1	Oe1

295.516 PLUTONIUM CHLORIDE OXIDE PuOCl										
Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	83.648	108.784	108.784	-931.777	0.000	-964.211	-931.777	-885.024	155.052
	300.00	83.693	109.302	108.786	-931.622	0.155	-964.413	-931.740	-884.734	154.046
	400.00	86.082	133.706	112.097	-923.134	8.643	-976.616	-933.135	-869.319	113.521
	500.00	88.471	153.171	118.429	-914.406	17.371	-990.991	-931.796	-853.565	89.171
	600.00	90.860	169.512	125.616	-905.439	26.338	-1007.147	-930.542	-838.079	72.961
	700.00	93.249	183.698	132.922	-896.234	35.543	-1024.822	-928.567	-822.822	61.400
	800.00	95.638	196.305	140.071	-886.790	44.987	-1043.834	-928.217	-807.741	52.740
	900.00	98.027	207.708	146.962	-877.106	54.671	-1064.043	-925.614	-792.836	46.015
	1000.00	100.416	218.159	153.567	-867.184	64.593	-1085.344	-926.235	-777.933	40.635
	1100.00	102.805	227.842	159.884	-857.023	74.754	-1107.650	-923.889	-763.215	36.242
	1200.00	105.194	236.890	165.928	-846.623	85.154	-1130.891	-921.330	-748.719	32.591
	1300.00	107.583	245.404	171.718	-835.984	95.793	-1155.010	-918.553	-734.446	29.510
	1400.00	109.972	253.464	177.271	-825.107	106.670	-1179.957	-915.556	-720.395	26.878
	1500.00	112.361	261.133	182.608	-813.990	117.787	-1205.690	-912.339	-706.566	24.605

References

Phase	H / S	C _p
SOL	Oe1,Ra2	Oe1

279.062 PLUTONIUM FLUORIDE OXIDE PuOF										
Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	79.464	91.630	91.630	-1128.843	0.000	-1156.162	-1128.843	-1080.005	189.212
	300.00	79.509	92.121	91.631	-1128.696	0.147	-1156.332	-1128.811	-1079.702	187.993
	400.00	81.898	115.322	94.778	-1120.626	8.217	-1166.754	-1130.498	-1063.542	138.884
	500.00	84.287	133.853	100.800	-1112.316	16.527	-1179.243	-1129.474	-1046.967	109.376
	600.00	86.676	149.432	107.641	-1103.768	25.075	-1193.427	-1128.556	-1030.595	89.721
	700.00	89.065	162.972	114.598	-1094.981	33.862	-1209.062	-1126.937	-1014.394	75.695
	800.00	91.454	175.021	121.412	-1085.955	42.888	-1225.972	-1126.955	-998.317	65.183
	900.00	93.843	185.931	127.984	-1076.691	52.152	-1244.028	-1124.732	-982.368	57.015
	1000.00	96.232	195.942	134.286	-1067.187	61.656	-1263.129	-1125.741	-966.380	50.479
	1100.00	98.621	205.226	140.318	-1057.444	71.399	-1283.192	-1123.790	-950.536	45.137
	1200.00	101.010	213.909	146.092	-1047.463	81.380	-1304.154	-1121.631	-934.880	40.694
	1300.00	103.399	222.089	151.626	-1037.242	91.601	-1325.957	-1119.260	-919.412	36.942
	1400.00	105.788	229.839	156.939	-1026.783	102.060	-1348.557	-1116.672	-904.135	33.734
	1500.00	108.177	237.219	162.047	-1016.084	112.759	-1371.913	-1113.867	-889.050	30.959

References

Phase	H / S	C _p	Remarks
SOL	Oe1	Oe1	MPT 1500

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	92.016	126.357	126.357	-827.595	0.000	-865.268	-827.595	-802.028	140.512
	300.00	92.061	126.926	126.359	-827.425	0.170	-865.503	-827.561	-801.870	139.618
	400.00	94.450	153.737	129.998	-818.099	9.496	-879.594	-837.206	-793.248	103.588
	500.00	96.839	175.070	136.950	-808.535	19.060	-896.070	-857.341	-780.395	81.527
	600.00	99.228	192.937	144.831	-798.731	28.864	-914.494	-855.308	-765.239	66.620
	700.00	101.617	208.412	152.833	-788.689	38.906	-934.578	-852.540	-750.444	55.999
	800.00	104.006	222.137	160.654	-778.408	49.187	-956.118	-851.386	-735.939	48.052
	900.00	106.395	234.525	168.184	-767.888	59.707	-978.961	-847.973	-721.711	41.887
	1000.00	108.784	245.859	175.393	-757.129	70.466	-1002.988	-847.781	-707.576	36.960
	1100.00	111.173	256.339	182.281	-746.131	81.464	-1028.104	-844.619	-693.706	32.941
	1200.00	113.562	266.115	188.864	-734.895	92.700	-1054.232	-841.241	-680.134	29.605
	1300.00	115.951	275.299	195.164	-723.419	104.176	-1081.308	-837.645	-666.853	26.794
	1400.00	118.340	283.979	201.200	-711.704	115.891	-1109.275	-833.828	-653.857	24.396
	1500.00	120.729	292.225	206.996	-699.751	127.844	-1138.089	-829.789	-641.142	22.327

References

Phase	H / S	C _p
SOL	Oe1	Oe1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [- -]
SOL	298.15	53.974	78.241	78.241	-439.320	0.000	-462.647	-439.320	-437.746	76.691
	300.00	54.067	78.575	78.242	-439.220	0.100	-462.793	-439.321	-437.736	76.217
	400.00	58.236	94.727	80.416	-433.596	5.724	-471.486	-444.943	-437.067	57.075
	500.00	61.813	108.112	84.653	-427.590	11.730	-481.647	-446.914	-434.934	45.437
	600.00	65.052	119.674	89.547	-421.244	18.076	-493.048	-448.458	-432.424	37.646
	700.00	67.938	129.923	94.597	-414.592	24.728	-505.538	-448.881	-429.713	32.066
	800.00	70.497	139.165	99.599	-407.668	31.652	-519.000	-450.889	-426.841	27.870
	900.00	72.798	147.603	104.471	-400.501	38.819	-533.344	-503.443	-422.693	24.532
	1000.00	74.940	155.385	109.178	-393.113	46.207	-548.498	-504.833	-413.531	21.601
	1100.00	77.038	162.626	113.712	-385.514	53.806	-564.403	-503.260	-404.475	19.207
	1200.00	78.966	169.412	118.074	-377.714	61.606	-581.008	-501.492	-395.571	17.219
	1300.00	80.802	175.806	122.271	-369.725	69.595	-598.272	-499.541	-386.822	15.543
	1400.00	82.451	181.856	126.313	-361.560	77.760	-616.158	-497.419	-378.230	14.112
	1500.00	83.884	187.594	130.209	-353.242	86.078	-634.633	-495.149	-369.795	12.877
	1600.00	85.107	193.048	133.967	-344.790	94.530	-653.668	-492.750	-361.515	11.802
	1700.00	86.139	198.240	137.597	-336.227	103.093	-673.234	-490.242	-353.389	10.858
	1800.00	87.004	203.188	141.104	-327.568	111.752	-693.307	-487.645	-345.414	10.024
	1900.00	87.727	207.912	144.497	-318.831	120.489	-713.864	-484.972	-337.585	9.281
	2000.00	88.336	212.428	147.782	-310.027	129.293	-734.883	-482.236	-329.898	8.616
	2100.00	88.852	216.751	150.964	-301.166	138.154	-756.344	-479.448	-322.349	8.018
	2200.00	89.300	220.895	154.049	-292.258	147.062	-778.227	-476.616	-314.935	7.478
	2300.00	89.700	224.873	157.042	-283.308	156.012	-800.517	-473.746	-307.650	6.987
	2400.00	90.072	228.699	159.949	-274.319	165.001	-823.197	-470.841	-300.490	6.540
	2500.00	90.433	232.383	162.773	-265.294	174.026	-846.252	-467.903	-293.453	6.131
	2600.00	90.800	235.937	165.519	-256.233	183.087	-869.669	-464.932	-286.533	5.757
	2623.00	90.887	236.737	166.140	-254.143	185.177	-875.105	-464.244	-284.958	5.675

References

Phase	H / S	C _p	Remarks
SOL	Oe1	Oe1	Oe1 MPT= 2623.

Pu2S3

DIPLUTONIUM TRISULFIDE

584.326

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [————— kJ / mol —————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	129.651	192.464	192.464	-989.516	0.000	-1046.899	-989.516	-987.539	173.013
	300.00	129.713	193.266	192.466	-989.276	0.240	-1047.256	-989.521	-987.527	171.944
	400.00	133.054	231.040	197.594	-976.138	13.378	-1068.554	-1003.456	-986.438	128.816
	500.00	136.399	261.089	207.388	-962.665	26.851	-1093.210	-1009.838	-981.603	102.547
	600.00	139.745	286.254	218.490	-948.858	40.658	-1120.610	-1015.387	-975.494	84.924
	700.00	143.092	308.047	229.761	-934.716	54.800	-1150.349	-1018.705	-968.576	72.276
	800.00	146.439	327.373	240.777	-920.239	69.277	-1182.137	-1025.453	-960.963	62.744
	900.00	149.786	344.814	251.383	-905.428	84.088	-1215.761	-1186.290	-949.291	55.095
	1000.00	153.134	360.769	261.535	-890.282	99.234	-1251.051	-1190.534	-922.499	48.186
	1100.00	156.481	375.521	271.235	-874.801	114.715	-1287.874	-1188.948	-895.770	42.537
	1200.00	159.829	389.280	280.505	-858.986	130.530	-1326.122	-1187.046	-869.199	37.835
	1300.00	163.176	402.205	289.374	-842.836	146.680	-1365.703	-1184.825	-842.799	33.864
	1400.00	166.524	414.420	297.874	-826.351	163.165	-1406.539	-1182.286	-816.583	30.467
	1500.00	169.871	426.024	306.034	-809.531	179.985	-1448.566	-1179.425	-790.559	27.530

References

Phase	H / S	C _p
SOL	Oe1	Oe1

Pu(SO4)2

PLUTONIUM DISULFATE

436.191

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [————— kJ / mol —————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	181.815	163.176	163.176	-2200.784	0.000	-2249.435	-2200.784	-1970.318	345.192
	300.00	182.213	164.302	163.179	-2200.447	0.337	-2249.738	-2200.808	-1968.888	342.814
	400.00	203.761	219.672	170.584	-2181.149	19.635	-2269.018	-2209.221	-1891.229	246.969
	500.00	225.308	267.455	185.277	-2159.695	41.089	-2293.423	-2211.882	-1811.480	189.244
	600.00	246.856	310.438	202.610	-2136.087	64.697	-2322.350	-2212.378	-1731.353	150.728
	700.00	268.404	350.109	220.881	-2110.324	90.460	-2355.401	-2210.018	-1651.342	123.225
	800.00	289.951	387.356	239.384	-2082.406	118.378	-2392.291	-2207.741	-1571.672	102.620
	900.00	311.499	422.752	257.807	-2052.334	148.450	-2432.810	-2307.217	-1490.204	86.489
	1000.00	333.046	456.687	276.009	-2020.106	180.678	-2476.793	-2299.450	-1399.709	73.113
	1100.00	354.594	489.440	293.931	-1985.724	215.060	-2524.108	-2286.973	-1310.323	62.222
	1200.00	376.142	521.217	311.554	-1949.188	251.596	-2574.649	-2272.513	-1222.159	53.199
	1300.00	397.689	552.176	328.877	-1910.496	290.288	-2628.325	-2256.045	-1135.284	45.616
	1400.00	419.237	582.436	345.912	-1869.650	331.134	-2685.061	-2237.555	-1049.752	39.167
	1500.00	440.784	612.095	362.672	-1826.649	374.135	-2744.792	-2217.030	-965.613	33.626

References

Phase	H / S	C _p
SOL	Oe1	Oe1

85.468

RUBIDIUM

Rb

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
SOL	298.15	31.063	76.780	76.780	0.000	0.000	-22.892	0.000	0.000	0.000
	300.00	31.234	76.973	76.781	0.058	0.058	-23.034	0.000	0.000	0.000
	312.65	32.403	78.287	76.815	0.460	0.460	-24.016	0.000	0.000	0.000
LIQ			6.985		2.184					
	312.65	34.404	85.272	76.815	2.644	2.644	-24.016	0.000	0.000	0.000
	400.00	32.860	93.560	79.611	5.580	5.580	-31.844	0.000	0.000	0.000
	500.00	31.436	100.733	83.150	8.792	8.792	-41.575	0.000	0.000	0.000
	600.00	30.330	106.362	86.567	11.877	11.877	-51.940	0.000	0.000	0.000
	700.00	29.523	110.973	89.734	14.868	14.868	-62.814	0.000	0.000	0.000
	800.00	29.008	114.879	92.639	17.792	17.792	-74.111	0.000	0.000	0.000
	900.00	28.781	118.279	95.303	20.679	20.679	-85.773	0.000	0.000	0.000
	970.39	28.793	120.446	97.049	22.704	22.704	-94.175	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL	Hu1,Ja2	Hu1	
LIQ	Ja2	Hu1	Ja2 BPT=970.385 GAS(Rb),L=71.787 / NBPT=961. (Rb+Rb2),L=72.22

Rb[g]

RUBIDIUM (GAS)

85.468

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	20.786	170.093	170.093	80.900	0.000	30.187	80.900	53.079	-9.299
	300.00	20.786	170.222	170.093	80.938	0.038	29.872	80.881	52.906	-9.212
	400.00	20.786	176.201	170.909	83.017	2.117	12.537	77.437	44.381	-5.796
	500.00	20.786	180.840	172.448	85.096	4.196	-5.324	76.304	36.251	-3.787
	600.00	20.786	184.629	174.172	87.174	6.274	-23.603	75.297	28.337	-2.467
	700.00	20.786	187.834	175.901	89.253	8.353	-42.231	74.385	20.583	-1.536
	800.00	20.786	190.609	177.570	91.332	10.432	-61.156	73.540	12.955	-0.846
	900.00	20.786	193.057	179.157	93.410	12.510	-80.342	72.731	5.431	-0.315
	1000.00	20.786	195.247	180.659	95.489	14.589	-99.759	0.000	0.000	0.000
	1100.00	20.786	197.229	182.076	97.567	16.667	-119.384	0.000	0.000	0.000
	1200.00	20.786	199.037	183.416	99.646	18.746	-139.199	0.000	0.000	0.000
	1300.00	20.786	200.701	184.682	101.725	20.825	-159.187	0.000	0.000	0.000
	1400.00	20.786	202.241	185.882	103.803	22.903	-179.335	0.000	0.000	0.000
	1500.00	20.786	203.676	187.021	105.882	24.982	-199.632	0.000	0.000	0.000
	1600.00	20.786	205.017	188.104	107.960	27.060	-220.067	0.000	0.000	0.000
	1700.00	20.786	206.277	189.137	110.039	29.139	-240.632	0.000	0.000	0.000
	1800.00	20.786	207.465	190.122	112.118	31.218	-261.320	0.000	0.000	0.000
	1900.00	20.786	208.589	191.065	114.196	33.296	-282.123	0.000	0.000	0.000
	2000.00	20.786	209.655	191.968	116.275	35.375	-303.036	0.000	0.000	0.000
	2100.00	20.786	210.669	192.835	118.353	37.453	-324.052	0.000	0.000	0.000
	2200.00	20.786	211.636	193.667	120.432	39.532	-345.168	0.000	0.000	0.000
	2300.00	20.786	212.560	194.469	122.511	41.611	-366.378	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Ja2	Hu1,e

170.936										
RUBIDIUM (GAS)										
Rb2[g]										
Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K ]	[	J / (K mol)	]	[		kJ / mol		- -]	[-]
GAS	298.15	38.115	271.070	271.070	113.290	0.000	32.470	113.290	78.254	-13.710
	300.00	38.124	271.306	271.071	113.361	0.071	31.969	113.245	78.037	-13.587
	400.00	38.440	282.321	272.571	117.190	3.900	4.262	106.031	67.950	-8.873
	500.00	38.631	290.923	275.412	121.046	7.756	-24.416	103.462	58.734	-6.136
	600.00	38.475	297.959	278.602	124.905	11.615	-53.871	101.150	50.009	-4.354
	700.00	37.845	303.849	281.800	128.724	15.434	-83.970	98.989	41.657	-3.109
	800.00	36.797	308.838	284.876	132.460	19.170	-114.611	96.876	33.611	-2.195
	900.00	35.494	313.099	287.781	136.076	22.786	-145.713	94.718	25.832	-1.499
	1000.00	34.080	316.766	290.501	139.555	26.265	-177.211	-51.423	22.307	-1.165
	1100.00	32.694	319.948	293.037	142.893	29.603	-209.050	-52.242	29.718	-1.411
	1200.00	31.399	322.737	295.398	146.097	32.807	-241.187	-53.195	37.210	-1.620
	1300.00	30.224	325.203	297.598	149.177	35.887	-273.587	-54.272	44.787	-1.800
	1400.00	29.177	327.404	299.649	152.146	38.856	-306.219	-55.461	52.450	-1.957
	1500.00	28.257	329.384	301.567	155.016	41.726	-339.060	-56.747	60.203	-2.096
	1600.00	27.454	331.182	303.363	157.801	44.511	-372.090	-58.120	68.044	-2.221
	1700.00	26.759	332.825	305.048	160.511	47.221	-405.292	-59.567	75.973	-2.334
	1800.00	26.155	334.337	306.634	163.156	49.866	-438.651	-61.079	83.989	-2.437
	1900.00	25.629	335.737	308.129	165.745	52.455	-472.155	-62.648	92.091	-2.532
	2000.00	25.163	337.039	309.542	168.284	54.994	-505.795	-64.266	100.277	-2.619
	2100.00	24.762	338.257	310.881	170.780	57.490	-539.560	-65.927	108.545	-2.700
	2200.00	24.408	339.401	312.152	173.238	59.948	-573.444	-67.626	116.893	-2.775
	2300.00	24.096	340.479	313.360	175.663	62.373	-607.438	-69.359	125.318	-2.846
	2400.00	23.821	341.498	314.511	178.058	64.768	-641.537	-71.120	133.820	-2.913
	2500.00	23.577	342.466	315.610	180.428	67.138	-675.736	-72.908	142.396	-2.975
	2600.00	23.360	343.386	316.661	182.774	69.484	-710.029	-74.719	151.044	-3.035
	2700.00	23.166	344.264	317.667	185.101	71.811	-744.412	-76.550	159.762	-3.091
	2800.00	22.992	345.103	318.632	187.408	74.118	-778.880	-78.399	168.548	-3.144
	2900.00	22.836	345.907	319.559	189.700	76.410	-813.431	-80.265	177.400	-3.195
	3000.00	22.695	346.679	320.450	191.976	78.686	-848.061	-82.146	186.317	-3.244
	3100.00	22.568	347.421	321.308	194.239	80.949	-882.766	-84.040	195.297	-3.291
	3200.00	22.453	348.136	322.136	196.490	83.200	-917.544	-85.946	204.339	-3.335
	3300.00	22.348	348.825	322.934	198.730	85.440	-952.392	-87.864	213.440	-3.378
	3400.00	22.253	349.491	323.705	200.960	87.670	-987.308	-89.791	222.599	-3.420
	3500.00	22.166	350.134	324.451	203.181	89.891	-1022.290	-91.727	231.815	-3.460
	3600.00	22.086	350.758	325.173	205.393	92.103	-1057.335	-93.672	241.087	-3.498
	3700.00	22.013	351.362	325.873	207.598	94.308	-1092.441	-95.624	250.412	-3.535
	3800.00	21.945	351.948	326.552	209.796	96.506	-1127.606	-97.584	259.791	-3.571
	3900.00	21.883	352.517	327.210	211.987	98.697	-1162.830	-99.549	269.221	-3.606
	4000.00	21.826	353.071	327.850	214.173	100.883	-1198.109	-101.521	278.702	-3.639
	4100.00	21.773	353.609	328.472	216.353	103.063	-1233.443	-103.499	288.232	-3.672
	4200.00	21.724	354.133	329.076	218.528	105.238	-1268.831	-105.481	297.810	-3.704
	4300.00	21.679	354.644	329.665	220.698	107.408	-1304.269	-107.468	307.436	-3.735
	4400.00	21.636	355.141	330.238	222.864	109.574	-1339.759	-109.460	317.108	-3.765
	4500.00	21.597	355.627	330.797	225.025	111.735	-1375.297	-111.455	326.825	-3.794
	4600.00	21.560	356.101	331.342	227.183	113.893	-1410.884	-113.455	336.587	-3.822
	4700.00	21.526	356.565	331.874	229.337	116.047	-1446.517	-115.457	346.392	-3.850
	4800.00	21.493	357.018	332.393	231.488	118.198	-1482.196	-117.464	356.240	-3.877
	4900.00	21.463	357.460	332.900	233.636	120.346	-1517.920	-119.473	366.129	-3.903
	5000.00	21.435	357.894	333.396	235.781	122.491	-1553.688	-121.486	376.060	-3.929

References

Phase	H / S	C _p
GAS	Ja2	Ja2

Rb3AsO4

RUBIDIUM ARSENATE

395.323

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	175.283	267.065	267.065	-1668.998	0.000	-1748.623	-1668.998	-1546.972	271.023
	300.00	175.483	268.150	267.068	-1668.674	0.324	-1749.118	-1669.001	-1546.215	269.220
	400.00	184.872	319.973	274.071	-1650.637	18.361	-1778.626	-1675.979	-1503.374	196.320
	500.00	192.841	362.098	287.590	-1631.744	37.254	-1812.793	-1675.407	-1460.268	152.553
	600.00	200.250	397.917	303.065	-1612.087	56.911	-1850.837	-1673.948	-1417.364	123.393
	635.00	202.773	409.341	308.610	-1605.034	63.964	-1864.966	-1673.252	-1402.416	115.362

References

Phase	H / S	C _p
SOL	G1	G1

RbBr

RUBIDIUM BROMIDE

165.372

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	52.761	109.960	109.960	-394.589	0.000	-427.373	-394.589	-381.791	66.888
	300.00	52.781	110.286	109.961	-394.491	0.098	-427.577	-394.619	-381.711	66.462
	400.00	53.848	125.616	112.044	-389.160	5.429	-439.406	-412.051	-373.654	48.794
	500.00	54.915	137.747	116.012	-383.722	10.867	-452.595	-411.670	-364.094	38.037
	600.00	55.982	147.853	120.500	-378.177	16.412	-466.889	-411.071	-354.631	30.873
	700.00	57.049	156.563	125.044	-372.525	22.064	-482.120	-410.277	-345.285	25.765
	800.00	58.116	164.251	129.473	-366.767	27.822	-498.168	-409.317	-336.064	21.943
	900.00	59.183	171.157	133.728	-360.902	33.687	-514.944	-408.218	-326.973	18.977
	965.00	59.876	175.308	136.390	-357.033	37.556	-526.205	-407.442	-321.132	17.383
LIQ			24.150		23.305					
	965.00	66.944	199.458	136.390	-333.728	60.861	-526.205	-384.137	-321.132	17.383
	1000.00	66.944	201.843	138.639	-331.385	63.204	-533.228	-455.393	-316.855	16.551
	1100.00	66.944	208.224	144.680	-324.690	69.899	-553.737	-452.663	-303.133	14.395
	1200.00	66.944	214.049	150.221	-317.996	76.593	-574.855	-449.937	-289.660	12.609
	1300.00	66.944	219.407	155.340	-311.302	83.287	-596.531	-447.214	-276.414	11.106
	1400.00	66.944	224.368	160.096	-304.607	89.982	-618.723	-444.494	-263.378	9.827
	1500.00	66.944	228.987	164.536	-297.913	96.676	-641.393	-441.777	-250.536	8.724
	1600.00	66.944	233.307	168.701	-291.218	103.371	-664.510	-439.063	-237.875	7.766

References

Phase	H / S	C _p	Remarks
SOL	Nb1	Ku1,e	p(GAS)= 1.013 bar at T= 965.
LIQ	Tk1	e	

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	37.195	261.019	261.020	-182.799	0.000	-260.622	-182.799	-215.039	37.674
	300.00	37.205	261.250	261.020	-182.730	0.069	-261.105	-182.858	-215.239	37.476
	400.00	37.588	272.011	262.485	-178.988	3.811	-287.793	-201.879	-222.040	28.995
	500.00	37.811	280.425	265.262	-175.218	7.581	-315.430	-203.166	-226.929	23.707
	600.00	37.972	287.333	268.382	-171.428	11.371	-343.828	-204.322	-231.571	20.160
	700.00	38.102	293.197	271.519	-167.624	15.175	-372.862	-205.376	-236.028	17.613
	800.00	38.217	298.292	274.554	-163.808	18.991	-402.442	-206.358	-240.339	15.693
	900.00	38.323	302.800	277.447	-159.981	22.818	-432.501	-207.296	-244.530	14.192
	1000.00	38.423	306.843	280.187	-156.144	26.655	-462.986	-280.152	-246.613	12.882
	1100.00	38.520	310.509	282.780	-152.297	30.502	-493.857	-280.270	-243.254	11.551
	1200.00	38.614	313.865	285.233	-148.440	34.359	-525.078	-280.381	-239.884	10.442
	1300.00	38.706	316.959	287.556	-144.574	38.225	-556.621	-280.487	-236.504	9.503
	1400.00	38.796	319.831	289.760	-140.699	42.100	-588.462	-280.586	-233.117	8.698
	1500.00	38.886	322.511	291.855	-136.815	45.984	-620.581	-280.679	-229.723	8.000
	1600.00	38.975	325.023	293.850	-132.922	49.877	-652.959	-280.766	-226.324	7.389
	1700.00	39.064	327.389	295.754	-129.020	53.779	-685.581	-280.846	-222.918	6.849
	1800.00	39.152	329.624	297.574	-125.109	57.690	-718.433	-280.921	-219.509	6.370
	1900.00	39.239	331.743	299.317	-121.189	61.610	-751.502	-280.989	-216.095	5.941
	2000.00	39.327	333.758	300.989	-117.261	65.538	-784.778	-281.051	-212.678	5.555

References

Phase	H / S	C _p
GAS	Nb1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL-1	298.15	117.612	181.330	181.330	-1136.002	0.000	-1190.066	-1136.002	-1050.823	184.100
	300.00	117.906	182.059	181.333	-1135.784	0.218	-1190.402	-1135.997	-1050.295	182.873
	400.00	131.066	217.885	186.128	-1123.299	12.703	-1210.453	-1140.049	-1020.532	133.268
	500.00	141.495	248.281	195.594	-1109.658	26.344	-1233.799	-1138.752	-990.783	103.506
	576.00	148.663	268.803	203.920	-1098.629	37.373	-1253.460	-1137.202	-968.399	87.819
			2.179		1.255					
SOL-2	576.00	148.663	270.982	203.920	-1097.374	38.628	-1253.460	-1135.947	-968.399	87.819
	600.00	150.848	277.095	206.725	-1093.780	42.222	-1260.037	-1135.365	-961.429	83.700
	700.00	159.694	301.017	218.515	-1078.250	57.752	-1288.962	-1132.475	-932.658	69.596
	800.00	168.269	322.904	230.214	-1061.850	74.152	-1320.173	-1128.853	-904.351	59.048
	900.00	176.688	343.210	241.654	-1044.601	91.401	-1353.490	-1124.519	-876.542	50.873
	1000.00	185.008	362.257	252.771	-1026.516	109.486	-1388.773	-1263.366	-845.243	44.151
	1100.00	193.265	380.278	263.551	-1007.602	128.400	-1425.908	-1256.062	-803.779	38.168
	1146.00	197.047	388.273	268.397	-998.625	137.377	-1443.585	-1252.466	-784.939	35.777
LIQ			25.557		29.288					
	1146.00	188.280	413.829	268.397	-969.337	166.665	-1443.585	-1223.178	-784.939	35.777
	1200.00	188.280	422.498	275.138	-959.170	176.832	-1466.168	-1219.356	-764.378	33.272
	1300.00	188.280	437.569	287.061	-940.342	195.660	-1509.181	-1212.351	-726.747	29.201
	1400.00	188.280	451.522	298.316	-921.514	214.488	-1553.644	-1205.430	-689.653	25.731
	1500.00	188.280	464.512	308.968	-902.686	233.316	-1599.453	-1198.580	-653.052	22.741

References

Phase	H / S	C _p
SOL-1	Nb1	e
SOL-2	Tk1	e
LIQ	Tk1	

Phase	T [K]	C _p [—]	S - J / (K mol)	-(G-H298)/T [—]	H [—]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—]	ΔG _f [—]	log K _f [-]
SOL	298.15	52.260	95.902	95.902	-435.349	0.000	-463.942	-435.349	-407.789	71.443
	300.00	52.279	96.225	95.902	-435.252	0.097	-464.120	-435.341	-407.618	70.973
	400.00	53.321	111.407	97.966	-429.972	5.377	-474.535	-437.317	-397.797	51.947
	500.00	54.363	123.417	101.896	-424.588	10.761	-486.297	-436.930	-387.958	40.530
	600.00	55.405	133.421	106.339	-419.100	16.249	-499.152	-436.345	-378.216	32.927
	700.00	56.446	142.040	110.837	-413.507	21.842	-512.935	-435.581	-368.585	27.504
	800.00	57.488	149.645	115.222	-407.810	27.539	-527.527	-434.661	-359.076	23.445
	900.00	58.530	156.477	119.433	-402.010	33.339	-542.838	-433.610	-349.689	20.295
	996.00	59.530	162.458	123.296	-396.343	39.006	-558.151	-504.466	-339.086	17.783
LIQ			23.818		23.723					
	996.00	64.015	186.277	123.296	-372.620	62.729	-558.151	-480.743	-339.086	17.783
	1000.00	64.015	186.533	123.548	-372.364	62.985	-558.897	-480.645	-338.517	17.682
	1100.00	64.015	192.635	129.556	-365.962	69.387	-577.860	-478.199	-324.423	15.406
	1200.00	64.015	198.205	135.048	-359.561	75.788	-597.406	-475.758	-310.551	13.518
	1300.00	64.015	203.329	140.106	-353.159	82.190	-617.486	-473.321	-296.882	11.929
	1400.00	64.015	208.073	144.793	-346.758	88.591	-638.059	-470.889	-283.401	10.574
	1500.00	64.015	212.489	149.161	-340.356	94.993	-659.090	-468.461	-270.094	9.406
	1600.00	64.015	216.621	153.249	-333.955	101.394	-680.548	-466.036	-256.949	8.389

References

Phase	H / S	C _p
SOL	Nb1	Ku1,e
LIQ	Tk1	Ku1

RbCl[g]

RUBIDIUM CHLORIDE (GAS)

120.921

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
GAS	298.15	36.817	249.559	249.560	-228.898	0.000	-303.304	-228.898	-247.151	43.300
	300.00	36.831	249.787	249.560	-228.830	0.068	-303.766	-228.919	-247.264	43.053
	400.00	37.335	260.460	251.012	-225.119	3.779	-329.303	-232.463	-252.565	32.982
	500.00	37.619	268.824	253.768	-221.370	7.528	-355.782	-233.712	-257.443	26.895
	600.00	37.817	275.701	256.867	-217.598	11.300	-383.018	-234.843	-262.082	22.816
	700.00	37.973	281.543	259.986	-213.808	15.090	-410.888	-235.882	-266.538	19.889
	800.00	38.109	286.622	263.005	-210.004	18.894	-439.302	-236.855	-270.851	17.685
	900.00	38.231	291.118	265.883	-206.187	22.711	-468.193	-237.787	-275.044	15.963
	1000.00	38.346	295.152	268.612	-202.358	26.540	-497.510	-310.639	-277.130	14.476
	1100.00	38.456	298.812	271.194	-198.518	30.380	-527.211	-310.754	-273.773	13.000
	1200.00	38.562	302.163	273.637	-194.667	34.231	-557.262	-310.864	-270.407	11.770
	1300.00	38.665	305.253	275.951	-190.805	38.093	-587.635	-310.968	-267.031	10.729
	1400.00	38.767	308.123	278.148	-186.934	41.964	-618.305	-311.065	-263.648	9.837
	1500.00	38.868	310.801	280.237	-183.052	45.846	-649.253	-311.157	-260.257	9.063
	1600.00	38.967	313.312	282.226	-179.160	49.738	-680.460	-311.241	-256.861	8.386
	1700.00	39.066	315.678	284.125	-175.259	53.639	-711.911	-311.320	-253.460	7.788
	1800.00	39.164	317.913	285.941	-171.347	57.551	-743.591	-311.392	-250.054	7.256
	1900.00	39.262	320.033	287.680	-167.426	61.472	-775.489	-311.458	-246.645	6.781
	2000.00	39.359	322.050	289.348	-163.495	65.403	-807.594	-311.518	-243.232	6.353

References

Phase	H / S	C _p
GAS	Nb1	e

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	81.589	373.301	373.301	-618.998	0.000	-730.298	-618.998	-617.992	108.270
	300.00	81.591	373.806	373.303	-618.847	0.151	-730.989	-619.025	-617.985	107.601
	400.00	81.687	397.291	376.504	-610.683	8.315	-769.600	-625.372	-616.124	80.458
	500.00	81.783	415.530	382.553	-602.510	16.488	-810.274	-627.194	-613.597	64.102
	600.00	81.878	430.449	389.330	-594.327	24.671	-852.596	-628.817	-610.722	53.168
	700.00	81.974	443.078	396.129	-586.134	32.864	-896.288	-630.282	-607.589	45.339
	800.00	82.070	454.030	402.697	-577.932	41.066	-941.156	-631.633	-604.253	39.454
	900.00	82.166	463.702	408.949	-569.720	49.278	-987.052	-632.921	-600.753	34.867
	1000.00	82.262	472.364	414.865	-561.499	57.499	-1033.863	-778.061	-593.103	30.981
	1100.00	82.357	480.209	420.454	-553.268	65.730	-1081.497	-777.741	-574.622	27.287
	1200.00	82.453	487.379	425.737	-545.027	73.971	-1129.882	-777.422	-556.171	24.209
	1300.00	82.549	493.982	430.736	-536.777	82.221	-1178.954	-777.102	-537.746	21.607
	1400.00	82.645	500.104	435.474	-528.517	90.481	-1228.662	-776.780	-519.347	19.377
	1500.00	82.741	505.809	439.975	-520.248	98.750	-1278.961	-776.457	-500.970	17.445
	1600.00	82.837	511.152	444.259	-511.969	107.029	-1329.812	-776.132	-482.614	15.756
	1700.00	82.932	516.177	448.343	-503.681	115.317	-1381.181	-775.803	-464.280	14.266
	1800.00	83.028	520.919	452.244	-495.383	123.615	-1433.038	-775.473	-445.964	12.942
	1900.00	83.124	525.411	455.978	-487.075	131.923	-1485.356	-775.140	-427.667	11.757
	2000.00	83.220	529.677	459.557	-478.758	140.240	-1538.113	-774.805	-409.388	10.692

References

Phase	H / S	C _p
GAS	Nb1	e

RbF

RUBIDIUM FLUORIDE

104.466

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
SOL	298.15	50.506	80.333	80.333	-557.698	0.000	-581.649	-557.698	-528.526	92.595
	300.00	50.582	80.645	80.334	-557.604	0.094	-581.798	-557.691	-528.345	91.993
	400.00	53.867	95.678	82.361	-552.371	5.327	-590.642	-559.587	-517.989	67.642
	500.00	56.350	107.973	86.290	-546.857	10.841	-600.843	-558.966	-507.655	53.034
	600.00	58.517	118.442	90.798	-541.112	16.586	-612.177	-558.043	-497.475	43.309
	700.00	60.534	127.615	95.415	-535.158	22.540	-624.489	-556.855	-487.471	36.376
	800.00	62.472	135.825	99.962	-529.007	28.691	-637.668	-555.431	-477.654	31.188
	900.00	64.364	143.293	104.368	-522.665	35.033	-651.629	-553.800	-468.027	27.164
	1000.00	66.226	150.171	108.609	-516.136	41.562	-666.307	-623.920	-456.589	23.850
	1068.00	67.482	154.569	111.396	-511.589	46.109	-676.669	-622.047	-445.272	21.778
LIQ			23.995		25.627					
	1068.00	71.128	178.564	111.396	-485.962	71.736	-676.669	-596.420	-445.272	21.778
	1100.00	71.128	180.664	113.381	-483.686	74.012	-682.417	-595.403	-440.758	20.930
	1200.00	71.128	186.853	119.249	-476.574	81.124	-700.797	-592.233	-426.840	18.580
	1300.00	71.128	192.546	124.671	-469.461	88.237	-719.771	-589.072	-413.185	16.602
	1400.00	71.128	197.817	129.710	-462.348	95.350	-739.292	-585.919	-399.774	14.916
	1500.00	71.128	202.725	134.416	-455.235	102.463	-759.322	-582.773	-386.587	13.462

References

Phase	H / S	C _p
SOL	Nb1/Pa2	Pa2
LIQ	Pa2	Pa2

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
GAS	298.15	35.688	237.091	237.091	-331.402	0.000	-402.091	-331.402	-348.967	61.138
	300.00	35.718	237.312	237.092	-331.336	0.066	-402.530	-331.423	-349.076	60.780
	400.00	36.792	247.755	238.508	-327.703	3.699	-426.805	-334.919	-354.152	46.248
	500.00	37.330	256.029	241.214	-323.995	7.407	-452.009	-336.104	-358.821	37.486
	600.00	37.657	262.866	244.269	-320.244	11.158	-477.964	-337.175	-363.262	31.625
	700.00	37.884	268.688	247.352	-316.467	14.935	-504.548	-338.163	-367.531	27.425
	800.00	38.058	273.759	250.343	-312.669	18.733	-531.676	-339.093	-371.662	24.267
	900.00	38.201	278.250	253.199	-308.856	22.546	-559.281	-339.991	-375.679	21.804
	1000.00	38.325	282.281	255.909	-305.030	26.372	-587.311	-412.814	-377.593	19.723
	1100.00	38.436	285.939	258.475	-301.191	30.211	-615.725	-412.908	-374.066	17.763
	1200.00	38.539	289.288	260.905	-297.343	34.059	-644.489	-413.002	-370.531	16.129
	1300.00	38.636	292.377	263.209	-293.484	37.918	-673.574	-413.095	-366.988	14.746
	1400.00	38.729	295.244	265.396	-289.615	41.787	-702.957	-413.187	-363.438	13.560
	1500.00	38.818	297.919	267.476	-285.738	45.664	-732.616	-413.276	-359.881	12.532
	1600.00	38.905	300.427	269.458	-281.852	49.550	-762.535	-413.364	-356.319	11.633
	1700.00	38.989	302.788	271.350	-277.957	53.445	-792.697	-413.448	-352.751	10.839
	1800.00	39.073	305.019	273.159	-274.054	57.348	-823.088	-413.530	-349.178	10.133
	1900.00	39.155	307.134	274.892	-270.143	61.259	-853.697	-413.609	-345.601	9.501
	2000.00	39.236	309.144	276.555	-266.223	65.179	-884.511	-413.684	-342.020	8.933

References

Phase	H / S	C _p
GAS	Nb1	e

Rb2F2[g]

DIRUBIDIUM DIFLUORIDE (GAS)

208.932

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	79.902	344.001	344.001	-854.000	0.000	-956.564	-854.000	-850.317	148.972
	300.00	79.958	344.495	344.002	-853.852	0.148	-957.201	-854.025	-850.294	148.049
	400.00	81.936	367.809	347.168	-845.743	8.257	-992.867	-860.174	-847.561	110.680
	500.00	82.854	386.203	353.200	-837.499	16.501	-1030.600	-861.717	-844.224	88.195
	600.00	83.354	401.357	360.001	-829.186	24.814	-1070.000	-863.049	-840.598	73.181
	700.00	83.658	414.231	366.851	-820.834	33.166	-1110.796	-864.227	-836.761	62.440
	800.00	83.857	425.416	373.488	-812.458	41.542	-1152.790	-865.305	-832.763	54.374
	900.00	83.994	435.301	379.818	-804.065	49.935	-1195.836	-866.334	-828.633	48.093
	1000.00	84.094	444.156	385.816	-795.660	58.340	-1239.816	-1011.230	-820.380	42.852
	1100.00	84.169	452.175	391.490	-787.247	66.753	-1284.639	-1010.680	-801.322	38.052
	1200.00	84.227	459.501	396.857	-778.827	75.173	-1330.228	-1010.146	-782.313	34.053
	1300.00	84.274	466.245	401.938	-770.402	83.598	-1376.520	-1009.624	-763.349	30.672
	1400.00	84.311	472.491	406.758	-761.973	92.027	-1423.461	-1009.115	-744.424	27.775
	1500.00	84.343	478.309	411.336	-753.540	100.460	-1471.004	-1008.616	-725.535	25.265
	1600.00	84.369	483.754	415.694	-745.104	108.896	-1519.110	-1008.128	-706.678	23.071
	1700.00	84.392	488.869	419.849	-736.666	117.334	-1567.744	-1007.649	-687.853	21.135
	1800.00	84.412	493.694	423.819	-728.226	125.774	-1616.874	-1007.178	-669.055	19.415
	1900.00	84.429	498.258	427.618	-719.784	134.216	-1666.474	-1006.716	-650.283	17.878
	2000.00	84.445	502.589	431.259	-711.340	142.660	-1716.518	-1006.262	-631.535	16.494

References

Phase	H / S	C _p
GAS	Nb1	e

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [- -]
SOL	298.15	52.468	118.411	118.411	-333.858	0.000	-369.162	-333.858	-328.957	57.632
	300.00	52.488	118.736	118.412	-333.761	0.097	-369.382	-333.869	-328.926	57.271
	400.00	53.589	133.987	120.484	-328.457	5.401	-382.052	-344.906	-326.265	42.606
	500.00	54.689	146.063	124.433	-323.043	10.815	-396.075	-366.801	-319.488	33.377
	600.00	55.789	156.131	128.900	-317.519	16.339	-411.198	-366.239	-310.074	26.994
	700.00	56.890	164.814	133.424	-311.885	21.973	-427.255	-365.476	-300.771	22.444
	800.00	57.990	172.482	137.836	-306.141	27.717	-444.127	-364.543	-291.589	19.039
	900.00	59.091	179.376	142.075	-300.287	33.571	-461.726	-363.466	-282.534	16.398
	929.00	59.410	181.255	143.269	-298.569	35.289	-466.955	-363.131	-279.931	15.740
LIQ			23.735		22.050					
	929.00	66.944	204.990	143.269	-276.519	57.339	-466.955	-341.081	-279.931	15.740
	1000.00	66.944	209.920	147.828	-271.766	62.092	-481.686	-411.648	-273.305	14.276
	1100.00	66.944	216.301	153.768	-265.072	68.786	-503.002	-408.930	-259.602	12.327
	1200.00	66.944	222.126	159.225	-258.377	75.481	-524.928	-406.215	-246.147	10.714
	1300.00	66.944	227.484	164.272	-251.683	82.175	-547.412	-403.503	-232.918	9.359
	1400.00	66.944	232.445	168.967	-244.988	88.870	-570.412	-400.794	-219.897	8.204
	1500.00	66.944	237.064	173.354	-238.294	95.564	-593.890	-398.088	-207.070	7.211

References

Phase	H / S	C _p
SOL	Nb1	Ku1,e
LIQ	Tk1	e

RbI[g]**RUBIDIUM IODIDE (GAS)**

212.372

Phase	T [K]	C_p [—————]	S J / (K mol)	$-(G-H_{298})/T$ [—————]	H [—————]	H-H ₂₉₈ kJ / mol	G kJ / mol	ΔH_f [—————]	ΔG_f [—————]	log K_f [—]
GAS	298.15	37.371	268.810	268.810	-134.298	0.000	-214.444	-134.298	-174.238	30.526
	300.00	37.379	269.041	268.811	-134.229	0.069	-214.941	-134.337	-174.486	30.381
	400.00	37.667	279.838	270.281	-130.475	3.823	-242.410	-146.924	-186.623	24.370
	500.00	37.848	288.264	273.066	-126.699	7.599	-270.831	-170.457	-194.244	20.293
	600.00	37.986	295.177	276.192	-122.907	11.391	-300.013	-171.626	-198.890	17.315
	700.00	38.104	301.042	279.334	-119.102	15.196	-329.831	-172.693	-203.348	15.174
	800.00	38.211	306.137	282.372	-115.286	19.012	-360.196	-173.688	-207.658	13.559
	900.00	38.312	310.643	285.268	-111.460	22.838	-391.039	-174.639	-211.847	12.295
	1000.00	38.410	314.685	288.011	-107.624	26.674	-422.309	-247.506	-213.927	11.174
	1100.00	38.504	318.350	290.605	-103.778	30.520	-453.964	-247.637	-210.563	9.999
	1200.00	38.597	321.705	293.059	-99.923	34.375	-485.969	-247.761	-207.187	9.019
	1300.00	38.689	324.798	295.383	-96.059	38.239	-518.296	-247.879	-203.801	8.189
	1400.00	38.780	327.668	297.588	-92.186	42.112	-550.921	-247.991	-200.407	7.477
	1500.00	38.870	330.347	299.684	-88.303	45.995	-583.823	-248.097	-197.004	6.860
	1600.00	38.959	332.858	301.679	-84.412	49.886	-616.985	-248.197	-193.595	6.320
	1700.00	39.049	335.223	303.584	-80.511	53.787	-650.390	-248.292	-190.179	5.843
	1800.00	39.138	337.457	305.404	-76.602	57.696	-684.025	-248.380	-186.758	5.420
	1900.00	39.226	339.576	307.147	-72.684	61.614	-717.878	-248.462	-183.332	5.040
	2000.00	39.315	341.590	308.819	-68.757	65.541	-751.937	-248.539	-179.902	4.699

References

Phase	H / S	C_p
GAS	Nb1	e

117.467

RUBIDIUM PEROXIDE

RbO2

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	77.570	130.081	130.081	-278.654	0.000	-317.438	-278.654	-233.381	40.887
	300.00	77.701	130.561	130.082	-278.510	0.144	-317.679	-278.622	-233.100	40.586
	400.00	83.050	153.714	133.203	-270.449	8.205	-331.935	-279.054	-217.568	28.411
	500.00	86.636	172.650	139.256	-261.957	16.697	-348.282	-276.833	-202.445	21.149
	600.00	89.527	188.708	146.193	-253.145	25.509	-366.370	-274.266	-187.803	16.350
	700.00	92.091	202.705	153.287	-244.062	34.592	-385.955	-271.428	-173.614	12.955
	800.00	94.480	215.159	160.257	-234.732	43.922	-406.859	-268.360	-159.847	10.437
	813.00	94.782	216.684	161.147	-233.502	45.152	-409.666	-267.945	-158.087	10.157
LIQ			25.732		20.920					
	813.00	90.793	242.416	161.147	-212.582	66.072	-409.666	-247.025	-158.087	10.157
	900.00	90.793	251.646	169.457	-204.683	73.971	-431.165	-244.603	-148.696	8.630
	1000.00	90.793	261.212	178.162	-195.604	83.050	-456.816	-313.795	-136.183	7.113
	1100.00	90.793	269.866	186.112	-186.525	92.129	-483.377	-310.304	-118.591	5.631
	1200.00	90.793	277.766	193.425	-177.445	101.209	-510.764	-306.852	-101.315	4.410
	1300.00	90.793	285.033	200.196	-168.366	110.288	-538.909	-303.435	-84.325	3.388
	1400.00	90.793	291.762	206.499	-159.287	119.367	-567.753	-300.047	-67.598	2.522
	1500.00	90.793	298.026	212.395	-150.207	128.447	-597.246	-296.688	-51.112	1.780

References

Phase	H / S	C _p	Remarks
SOL	Pa1	Pa1	Tk1 TPT= 423.
LIQ	Tk1	e	

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL-C	298.15	74.058	125.520	125.520	-339.000	0.000	-376.424	-339.000	-300.058	52.569
	300.00	74.120	125.978	125.521	-338.863	0.137	-376.656	-339.005	-299.816	52.203
	400.00	77.467	147.760	128.469	-331.284	7.716	-390.387	-343.956	-285.437	37.274
	500.00	80.814	165.405	134.145	-323.370	15.630	-406.072	-343.995	-270.791	28.289
	543.00	82.253	172.131	136.889	-319.864	19.136	-413.331	-343.843	-264.502	25.444
SOL-B			1.541		0.837					
	543.00	82.253	173.673	136.889	-319.027	19.973	-413.331	-343.006	-264.502	25.444
	600.00	84.161	181.977	140.783	-314.284	24.716	-423.470	-342.661	-256.277	22.311
	613.00	84.596	183.785	141.676	-313.187	25.813	-425.847	-342.560	-254.406	21.678
SOL-A			6.825		4.184					
	613.00	84.596	190.611	141.676	-309.003	29.997	-425.847	-338.376	-254.406	21.678
	700.00	87.508	202.027	148.479	-301.516	37.484	-442.935	-337.501	-242.544	18.099
	778.00	90.119	211.408	154.324	-294.589	44.411	-459.064	-336.442	-232.018	15.578
LIQ			26.889		20.920					
	778.00	92.048	238.297	154.324	-273.669	65.331	-459.064	-315.522	-232.018	15.578
	800.00	92.048	240.864	156.669	-271.644	67.356	-464.335	-315.145	-229.662	14.995
	900.00	92.048	251.705	166.638	-262.439	76.561	-488.974	-313.417	-219.080	12.715
	1000.00	92.048	261.404	175.638	-253.234	85.766	-514.638	-455.563	-204.683	10.692

References

Phase	H / S	C _p
SOL-C	Tk1	Tk1,e
SOL-B	Tk1	e
SOL-A	Tk1	e
LIQ	Tk1	e

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	117.451	161.084	161.084	-1536.461	0.000	-1584.488	-1536.461	-1441.346	252.518
	300.00	117.799	161.812	161.086	-1536.243	0.218	-1584.787	-1536.477	-1440.756	250.858
	400.00	131.750	197.797	165.898	-1523.701	12.760	-1602.820	-1541.558	-1407.493	183.800
	500.00	140.850	228.226	175.400	-1510.048	26.413	-1624.161	-1541.196	-1373.999	143.541
	600.00	148.041	254.560	186.447	-1495.593	40.868	-1648.329	-1540.029	-1340.657	116.715
	700.00	154.331	277.861	197.873	-1480.469	55.992	-1674.972	-1538.216	-1307.564	97.572
	800.00	160.139	298.852	209.205	-1464.743	71.718	-1703.825	-1535.852	-1274.769	83.234
	900.00	165.669	318.035	220.246	-1448.451	88.010	-1734.683	-1533.003	-1242.300	72.101
	1000.00	171.025	335.769	230.923	-1431.615	104.846	-1767.384	-1673.590	-1206.163	63.004
	1100.00	176.268	352.316	241.215	-1414.250	122.211	-1801.797	-1668.300	-1159.673	55.068
	1143.00	178.497	359.118	245.523	-1406.622	129.839	-1817.093	-1665.898	-1139.837	52.090
LIQ			36.605		41.840					
	1143.00	177.820	395.723	245.523	-1364.782	171.679	-1817.093	-1624.058	-1139.837	52.090
	1200.00	177.820	404.377	252.864	-1354.646	181.815	-1839.898	-1620.877	-1115.767	48.568
	1300.00	177.820	418.610	265.074	-1336.864	199.597	-1881.057	-1615.369	-1073.899	43.150
	1400.00	177.820	431.788	276.517	-1319.082	217.379	-1923.585	-1609.948	-1032.451	38.521
	1500.00	177.820	444.056	287.282	-1301.300	235.161	-1967.384	-1604.609	-991.388	34.523
	1600.00	177.820	455.532	297.443	-1283.518	252.943	-2012.370	-1599.351	-950.679	31.036
	1700.00	177.820	466.313	307.063	-1265.736	270.725	-2058.468	-1644.347	-909.849	27.956
	1800.00	177.820	476.476	316.195	-1247.954	288.507	-2105.612	-1639.016	-866.797	25.154

References

Phase	H / S	C _p
SOL	S5	S5
LIQ	S5	S5

Rb2Si2O5

RUBIDIUM DISILICATE

307.104

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
SOL	298.15	170.718	194.556	194.556	-2474.514	0.000	-2532.521	-2474.514	-2322.603	406.910
	300.00	171.273	195.614	194.559	-2474.198	0.316	-2532.882	-2474.523	-2321.661	404.237
	400.00	192.541	248.133	201.576	-2455.891	18.623	-2555.144	-2478.933	-2269.439	296.358
	500.00	205.091	292.539	215.446	-2435.968	38.546	-2582.237	-2477.639	-2217.194	231.629
	600.00	214.210	330.771	231.555	-2414.984	59.530	-2613.447	-2475.479	-2165.296	188.506
	700.00	221.708	364.370	248.176	-2393.179	81.335	-2648.237	-2472.688	-2113.811	157.735
	800.00	228.342	394.415	264.611	-2370.671	103.843	-2686.203	-2469.388	-2062.763	134.685
	900.00	234.475	421.668	280.571	-2347.527	126.987	-2727.028	-2465.654	-2012.155	116.782
	1000.00	240.295	446.675	295.948	-2323.786	150.728	-2770.462	-2605.407	-1957.975	102.274
	1100.00	245.912	469.843	310.716	-2299.474	175.040	-2816.301	-2599.336	-1893.523	89.916
	1200.00	251.391	491.476	324.888	-2274.608	199.906	-2864.379	-2592.897	-1829.640	79.642
	1300.00	256.771	511.811	338.492	-2249.200	225.314	-2914.553	-2586.087	-1766.309	70.971
	1363.00	260.123	524.041	346.787	-2232.917	241.597	-2947.185	-2581.604	-1726.687	66.172
LIQ			39.906		54.392					
	1363.00	259.408	563.947	346.787	-2178.525	295.989	-2947.185	-2527.212	-1726.687	66.172
	1400.00	259.408	570.895	352.619	-2168.927	305.587	-2968.180	-2524.573	-1704.992	63.614
	1500.00	259.408	588.792	367.774	-2142.986	331.528	-3026.175	-2517.542	-1646.696	57.343
	1600.00	259.408	605.534	382.116	-2117.046	357.468	-3085.900	-2510.657	-1588.865	51.871
	1700.00	259.408	621.261	395.726	-2091.105	383.409	-3147.248	-2604.270	-1530.567	47.029
	1800.00	259.408	636.088	408.671	-2065.164	409.350	-3210.122	-2597.215	-1467.612	42.589

References

Phase	H / S	C _p
SOL	S5	S5
LIQ	S5	S5

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	270.882	278.236	278.236	–4317.147	0.000	–4400.103	–4317.147	–4056.634	710.705
	300.00	271.378	279.913	278.241	–4316.645	0.502	–4400.619	–4317.153	–4055.018	706.041
	400.00	293.170	361.161	289.171	–4288.351	28.796	–4432.816	–4321.763	–3966.356	517.953
	500.00	309.947	428.435	310.484	–4258.171	58.976	–4472.389	–4320.888	–3877.583	405.088
	600.00	324.750	486.273	335.072	–4226.426	90.721	–4518.190	–4319.038	–3789.081	329.869
	700.00	338.621	537.384	360.391	–4193.252	123.895	–4569.421	–4316.286	–3700.960	276.169
	800.00	351.995	583.477	385.441	–4158.718	158.429	–4625.500	–4312.651	–3613.294	235.924
	900.00	365.080	625.694	409.823	–4122.863	194.284	–4685.987	–4308.138	–3526.136	204.652
	1000.00	377.987	664.828	433.389	–4085.708	231.439	–4750.536	–4446.620	–3435.519	179.453
	1100.00	390.776	701.455	456.111	–4047.269	269.878	–4818.870	–4438.751	–3334.783	158.356
	1173.00	400.060	726.859	472.176	–4018.403	298.744	–4871.009	–4432.427	–3261.722	145.247
			39.236		46.024					
LIQ	1173.00	397.480	766.095	472.176	–3972.379	344.768	–4871.009	–4386.403	–3261.722	145.247
	1200.00	397.480	775.141	478.891	–3961.647	355.500	–4891.817	–4384.053	–3235.861	140.853
	1300.00	397.480	806.956	502.920	–3921.899	395.248	–4970.943	–4375.554	–3140.525	126.188
	1400.00	397.480	836.413	525.702	–3882.151	434.996	–5053.129	–4367.358	–3045.832	113.641
	1500.00	397.480	863.836	547.340	–3842.403	474.744	–5138.157	–4359.451	–2951.715	102.788
	1600.00	397.480	889.489	567.932	–3802.655	514.492	–5225.837	–4351.825	–2858.116	93.308
	1700.00	397.480	913.586	587.563	–3762.907	554.240	–5316.003	–4545.181	–2763.199	84.903
	1800.00	397.480	936.305	606.312	–3723.159	593.988	–5408.509	–4537.191	–2658.607	77.151

References

Phase	H / S	C _p
SOL	S5	S5
LIQ	S5	S5

Rb2SO4

RUBIDIUM SULFATE

266.999

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
SOL-A	298.15	113.141	197.439	197.439	-1435.610	0.000	-1494.476	-1435.610	-1316.806	230.699
	300.00	113.500	198.140	197.441	-1435.400	0.210	-1494.842	-1435.666	-1316.068	229.148
	400.00	129.202	233.085	202.099	-1423.216	12.394	-1516.450	-1445.049	-1274.438	166.425
	500.00	141.189	263.243	211.380	-1409.679	25.931	-1541.300	-1447.956	-1231.445	128.648
	600.00	151.714	289.929	222.288	-1395.025	40.585	-1568.983	-1449.370	-1187.984	103.423
	700.00	161.549	314.061	233.701	-1379.358	56.252	-1599.201	-1449.502	-1144.395	85.396
	800.00	171.016	336.254	245.151	-1362.728	72.882	-1631.731	-1448.753	-1100.850	71.878
	900.00	180.269	356.932	256.435	-1345.162	90.448	-1666.401	-1499.979	-1056.294	61.306
	928.00	182.833	362.494	259.551	-1340.079	95.531	-1676.473	-1498.948	-1042.506	58.680
SOL-B			4.509		4.184					
	928.00	205.016	367.003	259.551	-1335.895	99.715	-1676.473	-1494.764	-1042.506	58.680
	1000.00	205.016	382.323	267.846	-1321.134	114.476	-1703.456	-1634.329	-1003.572	52.421
	1100.00	205.016	401.863	279.155	-1300.632	134.978	-1742.681	-1626.846	-940.860	44.678
	1200.00	205.016	419.701	290.135	-1280.130	155.480	-1783.772	-1619.447	-878.825	38.254
	1300.00	205.016	436.111	300.741	-1259.629	175.981	-1826.574	-1612.123	-817.404	32.844
	1343.00	205.016	442.783	305.183	-1250.813	184.797	-1845.471	-1608.994	-791.168	30.772
LIQ			28.599		38.409					
	1343.00	209.200	471.382	305.183	-1212.404	223.206	-1845.471	-1570.585	-791.168	30.772
	1400.00	209.200	480.078	312.128	-1200.480	235.130	-1872.589	-1566.217	-758.179	28.288
	1500.00	209.200	494.511	323.811	-1179.560	256.050	-1921.327	-1558.600	-700.728	24.402

References

Phase	H / S	C _p
SOL-A	Nb1	e
SOL-B	Tk1	e
LIQ	Tk1	e

186.207

RHENIUM

Re

Phase	T [K]	C _p [————— J / (K mol)]	S [————— J / (K mol)]	-(G-H298)/T [—————]	H [————— kJ / mol]	H-H298 [————— kJ / mol]	G [————— kJ / mol]	ΔH _f [————— kJ / mol]	ΔG _f [————— kJ / mol]	log K _i [— —]
SOL	298.15	25.314	36.526	36.526	0.000	0.000	-10.890	0.000	0.000	0.000
	300.00	25.324	36.683	36.527	0.047	0.047	-10.958	0.000	0.000	0.000
	400.00	25.869	44.043	37.527	2.606	2.606	-15.011	0.000	0.000	0.000
	500.00	26.414	49.874	39.433	5.221	5.221	-19.716	0.000	0.000	0.000
	600.00	26.958	54.738	41.589	7.889	7.889	-24.953	0.000	0.000	0.000
	700.00	27.503	58.934	43.774	10.612	10.612	-30.642	0.000	0.000	0.000
	800.00	28.048	62.642	45.905	13.390	13.390	-36.724	0.000	0.000	0.000
	900.00	28.593	65.977	47.953	16.222	16.222	-43.158	0.000	0.000	0.000
	1000.00	29.137	69.018	49.910	19.108	19.108	-49.910	0.000	0.000	0.000
	1100.00	29.682	71.821	51.776	22.049	22.049	-56.953	0.000	0.000	0.000
	1200.00	30.227	74.427	53.556	25.045	25.045	-64.267	0.000	0.000	0.000
	1300.00	30.772	76.868	55.256	28.095	28.095	-71.833	0.000	0.000	0.000
	1400.00	31.316	79.168	56.883	31.199	31.199	-79.636	0.000	0.000	0.000
	1500.00	31.861	81.347	58.442	34.358	34.358	-87.663	0.000	0.000	0.000
	1600.00	32.406	83.421	59.939	37.571	37.571	-95.902	0.000	0.000	0.000
	1700.00	32.951	85.402	61.379	40.839	40.839	-104.344	0.000	0.000	0.000
	1800.00	33.495	87.301	62.767	44.161	44.161	-112.980	0.000	0.000	0.000
	1900.00	34.040	89.126	64.106	47.538	47.538	-121.802	0.000	0.000	0.000
	2000.00	34.585	90.886	65.401	50.970	50.970	-130.803	0.000	0.000	0.000
	2100.00	35.130	92.587	66.656	54.455	54.455	-139.977	0.000	0.000	0.000
	2200.00	35.674	94.234	67.872	57.995	57.995	-149.318	0.000	0.000	0.000
	2300.00	36.219	95.831	69.053	61.590	61.590	-158.822	0.000	0.000	0.000
	2400.00	36.764	97.384	70.201	65.239	65.239	-168.483	0.000	0.000	0.000
	2500.00	37.309	98.896	71.319	68.943	68.943	-178.298	0.000	0.000	0.000
	2600.00	37.853	100.370	72.408	72.701	72.701	-188.261	0.000	0.000	0.000
	2700.00	38.398	101.809	73.471	76.514	76.514	-198.370	0.000	0.000	0.000
	2800.00	38.943	103.215	74.508	80.381	80.381	-208.622	0.000	0.000	0.000
	2900.00	39.488	104.591	75.522	84.302	84.302	-219.012	0.000	0.000	0.000
	3000.00	40.033	105.939	76.513	88.278	88.278	-229.539	0.000	0.000	0.000
	3100.00	40.577	107.261	77.484	92.309	92.309	-240.199	0.000	0.000	0.000
	3200.00	41.122	108.558	78.435	96.394	96.394	-250.991	0.000	0.000	0.000
	3300.00	41.667	109.831	79.367	100.533	100.533	-261.910	0.000	0.000	0.000
	3400.00	42.212	111.083	80.281	104.727	104.727	-272.956	0.000	0.000	0.000
	3453.00	42.500	111.738	80.759	106.972	106.972	-278.861	0.000	0.000	0.000
LIQ			9.623		33.229					
	3453.00	41.840	121.362	80.759	140.201	140.201	-278.861	0.000	0.000	0.000
	3500.00	41.840	121.927	81.308	142.167	142.167	-284.578	0.000	0.000	0.000
	3600.00	41.840	123.106	82.453	146.351	146.351	-296.830	0.000	0.000	0.000
	3700.00	41.840	124.252	83.567	150.535	150.535	-309.198	0.000	0.000	0.000
	3800.00	41.840	125.368	84.653	154.719	154.719	-321.680	0.000	0.000	0.000
	3900.00	41.840	126.455	85.711	158.903	158.903	-334.271	0.000	0.000	0.000
	4000.00	41.840	127.514	86.742	163.087	163.087	-346.970	0.000	0.000	0.000
	4100.00	41.840	128.547	87.749	167.271	167.271	-359.773	0.000	0.000	0.000
	4200.00	41.840	129.556	88.733	171.455	171.455	-372.678	0.000	0.000	0.000
	4300.00	41.840	130.540	89.694	175.639	175.639	-385.683	0.000	0.000	0.000
	4400.00	41.840	131.502	90.633	179.823	179.823	-398.786	0.000	0.000	0.000
	4500.00	41.840	132.442	91.552	184.007	184.007	-411.983	0.000	0.000	0.000

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
LIQ	4600.00	41.840	133.362	92.451	188.191	188.191	-425.273	0.000	0.000	0.000
	4700.00	41.840	134.262	93.331	192.375	192.375	-438.655	0.000	0.000	0.000
	4800.00	41.840	135.143	94.193	196.559	196.559	-452.125	0.000	0.000	0.000
	4900.00	41.840	136.005	95.037	200.743	200.743	-465.683	0.000	0.000	0.000
	5000.00	41.840	136.851	95.865	204.927	204.927	-479.326	0.000	0.000	0.000
	5100.00	41.840	137.679	96.677	209.111	209.111	-493.052	0.000	0.000	0.000
	5200.00	41.840	138.492	97.473	213.295	213.295	-506.861	0.000	0.000	0.000
	5300.00	41.840	139.289	98.255	217.479	217.479	-520.750	0.000	0.000	0.000
	5400.00	41.840	140.071	99.022	221.663	221.663	-534.718	0.000	0.000	0.000
	5500.00	41.840	140.838	99.775	225.847	225.847	-548.764	0.000	0.000	0.000
	5600.00	41.840	141.592	100.515	230.031	230.031	-562.885	0.000	0.000	0.000
	5700.00	41.840	142.333	101.242	234.215	234.215	-577.082	0.000	0.000	0.000
	5800.00	41.840	143.060	101.957	238.399	238.399	-591.351	0.000	0.000	0.000

References

Phase	H / C	C _p	Remarks
SOL	Hu1	Hu1	
LIQ	Hu1	Hu1	BPT= 5864., L= 714.84 kJ

186.207										
RHENIUM (GAS)										Re[g]
Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		
GAS	298.15	20.786	188.933	188.933	774.877	0.000	718.547	774.877	729.437	-127.794
	300.00	20.786	189.062	188.934	774.915	0.038	718.197	774.869	729.155	-126.957
	400.00	20.786	195.042	189.749	776.994	2.117	698.977	774.388	713.988	-93.237
	500.00	20.786	199.680	191.289	779.073	4.196	679.233	773.852	698.949	-73.019
	600.00	20.786	203.470	193.013	781.151	6.274	659.069	773.262	684.023	-59.549
	700.00	20.786	206.674	194.741	783.230	8.353	638.558	772.618	669.200	-49.936
	800.00	20.786	209.450	196.410	785.309	10.432	617.749	771.919	654.473	-42.733
	900.00	20.786	211.898	197.998	787.387	12.510	596.679	771.165	639.837	-37.135
	1000.00	20.786	214.088	199.499	789.466	14.589	575.378	770.357	625.288	-32.662
	1100.00	20.746	216.066	200.917	791.541	16.664	553.869	769.492	610.822	-29.006
	1200.00	20.771	217.872	202.256	793.617	18.740	532.170	768.572	596.438	-25.962
	1300.00	20.804	219.536	203.522	795.696	20.819	510.299	767.601	582.132	-23.390
	1400.00	20.831	221.079	204.721	797.778	22.901	488.267	766.579	567.903	-21.189
	1500.00	20.854	222.517	205.860	799.862	24.985	466.086	765.504	553.749	-19.283
	1600.00	20.884	223.864	206.944	801.949	27.072	443.767	764.377	539.669	-17.618
	1700.00	20.934	225.131	207.977	804.039	29.162	421.316	763.200	525.660	-16.152
	1800.00	21.014	226.330	208.963	806.136	31.259	398.743	761.975	511.723	-14.850
	1900.00	21.135	227.469	209.908	808.243	33.366	376.052	760.705	497.854	-13.687
	2000.00	21.306	228.557	210.813	810.365	35.488	353.251	759.396	484.054	-12.642
	2100.00	21.533	229.602	211.683	812.506	37.629	330.342	758.051	470.319	-11.699
	2200.00	21.823	230.610	212.521	814.674	39.797	307.332	756.678	456.650	-10.842
	2300.00	22.179	231.588	213.329	816.873	41.996	284.221	755.283	443.044	-10.062
	2400.00	22.605	232.540	214.109	819.112	44.235	261.015	753.873	429.498	-9.348
	2500.00	23.104	233.473	214.865	821.397	46.520	237.714	752.454	416.012	-8.692
	2600.00	23.677	234.390	215.599	823.735	48.858	214.321	751.034	402.582	-8.088
	2700.00	24.324	235.296	216.311	826.135	51.258	190.836	749.621	389.207	-7.530
	2800.00	25.047	236.193	217.005	828.602	53.725	167.262	748.222	375.884	-7.012
	2900.00	25.846	237.086	217.682	831.147	56.270	143.598	746.844	362.610	-6.531
	3000.00	26.720	237.976	218.344	833.774	58.897	119.845	745.496	349.384	-6.083
	3100.00	27.668	238.868	218.992	836.493	61.616	96.003	744.184	336.202	-5.665
	3200.00	28.690	239.762	219.627	839.310	64.433	72.071	742.916	323.062	-5.273
	3300.00	29.784	240.662	220.251	842.233	67.356	48.050	741.700	309.960	-4.906
	3400.00	30.949	241.568	220.864	845.269	70.392	23.939	740.542	296.895	-4.561
	3500.00	32.145	242.482	221.469	848.424	73.547	-0.264	706.257	284.314	-4.243
	3600.00	33.377	243.405	222.065	851.700	76.823	-24.558	705.348	272.272	-3.951
	3700.00	34.638	244.337	222.655	855.100	80.223	-48.945	704.565	260.253	-3.674
	3800.00	35.921	245.277	223.238	858.628	83.751	-73.426	703.909	248.254	-3.412
	3900.00	37.215	246.227	223.815	862.285	87.408	-98.001	703.382	236.270	-3.164
	4000.00	38.512	247.186	224.387	866.071	91.194	-122.671	702.984	224.298	-2.929
	4100.00	39.801	248.153	224.955	869.987	95.110	-147.438	702.716	212.335	-2.705
	4200.00	41.072	249.127	225.519	874.031	99.154	-172.302	702.575	200.376	-2.492
	4300.00	42.316	250.108	226.079	878.200	103.323	-197.264	702.561	188.419	-2.289
	4400.00	43.525	251.095	226.637	882.493	107.616	-222.324	702.669	176.462	-2.095
	4500.00	44.691	252.086	227.191	886.904	112.027	-247.483	702.897	164.500	-1.909
	4600.00	45.808	253.081	227.743	891.429	116.552	-272.741	703.238	152.532	-1.732
	4700.00	46.870	254.077	228.293	896.064	121.187	-298.099	703.688	140.555	-1.562
	4800.00	47.872	255.075	228.840	900.801	125.924	-323.557	704.242	128.568	-1.399
	4900.00	48.809	256.071	229.386	905.636	130.759	-349.114	704.893	116.568	-1.243
	5000.00	49.680	257.066	229.930	910.561	135.684	-374.771	705.634	104.554	-1.092

Re[g]

RHENIUM (GAS) [continued]

186.207

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	5100.00	50.481	258.058	230.471	915.570	140.693	-400.527	706.458	92.525	-0.948
	5200.00	51.212	259.046	231.011	920.655	145.778	-426.383	707.360	80.478	-0.808
	5300.00	51.871	260.028	231.550	925.810	150.933	-452.336	708.330	68.414	-0.674
	5400.00	52.459	261.003	232.086	931.027	156.150	-478.388	709.363	56.330	-0.545
	5500.00	52.977	261.970	232.621	936.299	161.422	-504.537	710.452	44.227	-0.420
	5600.00	53.425	262.929	233.153	941.620	166.743	-530.782	711.588	32.104	-0.299
	5700.00	53.807	263.878	233.684	946.982	172.105	-557.122	712.767	19.960	-0.183
	5800.00	54.124	264.817	234.213	952.379	177.502	-583.557	713.980	7.795	-0.070
	5900.00	54.380	265.744	234.739	957.805	182.928	-610.085	0.000	0.000	0.000
	6000.00	54.578	266.660	235.264	963.253	188.376	-636.705	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

Re3As7

TRIRHENIUM HEPTAARSENIDE

1083.072

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	248.638	336.812	336.812	-95.395	0.000	-195.815	-95.395	-88.624	15.527
	300.00	248.762	338.350	336.817	-94.935	0.460	-196.440	-95.395	-88.582	15.423
	400.00	255.015	410.788	346.651	-69.740	25.655	-234.055	-95.424	-86.307	11.271
	500.00	260.831	468.322	365.424	-43.946	51.449	-278.107	-95.440	-84.025	8.778
	600.00	266.474	516.378	386.686	-17.580	77.815	-327.406	-95.436	-81.743	7.116
	700.00	272.037	557.873	408.243	9.346	104.741	-381.165	-95.424	-79.461	5.929
	800.00	277.556	594.560	429.283	36.826	132.221	-438.821	-95.401	-77.182	5.039
	900.00	283.050	627.568	449.511	64.857	160.252	-499.955	-95.344	-74.908	4.348
	1000.00	288.529	657.674	468.844	93.436	188.831	-564.239	-95.093	-72.648	3.795
	1100.00	293.997	685.431	487.288	122.562	217.957	-631.412	-94.651	-70.425	3.344

References

Phase	H / S	C _p
SOL	Ku1	e

325.126

RHENIUM ARSENATE

ReAsO4

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	121.372	169.996	169.996	-771.571	0.000	-822.255	-771.571	-678.390	118.851
	300.00	121.674	170.748	169.998	-771.346	0.225	-822.570	-771.547	-677.812	118.018
	400.00	133.588	207.550	174.935	-758.525	13.046	-841.545	-769.735	-646.815	84.465
	500.00	141.143	238.217	184.611	-744.768	26.803	-863.876	-767.276	-616.360	64.391
	600.00	146.983	264.484	195.786	-730.352	41.219	-889.043	-764.470	-586.436	51.054
	700.00	152.012	287.526	207.279	-715.398	56.173	-916.666	-761.426	-557.001	41.564
	749.00	154.305	297.888	212.871	-707.893	63.678	-931.011	-759.859	-542.745	37.851

References

Phase	H / S	C _p
SOL	G1	G1

425.919

RHENIUM TRIBROMIDE

ReBr3

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	100.666	200.832	200.832	-175.728	0.000	-235.606	-175.728	-156.644	27.443
	300.00	100.793	201.455	200.834	-175.542	0.186	-235.978	-175.798	-156.525	27.253
	400.00	107.612	231.385	204.869	-165.121	10.607	-257.676	-219.661	-140.940	18.405
	500.00	114.432	256.131	212.713	-154.019	21.709	-282.085	-216.711	-121.589	12.702
	600.00	121.252	277.597	221.775	-142.235	33.493	-308.793	-213.173	-102.887	8.957
	700.00	128.072	296.801	231.144	-129.769	45.959	-337.529	-209.033	-84.825	6.330

References

Phase	H / S	C _p
SOL	Tk1	e

ReCl3

RHENIUM TRICHLORIDE

292.565

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	92.379	123.800	123.800	-264.002	0.000	-300.913	-264.002	-190.239	33.329
	300.00	92.694	124.373	123.802	-263.831	0.171	-301.143	-263.972	-189.782	33.044
	400.00	104.730	152.879	127.607	-253.893	10.109	-315.045	-261.795	-165.354	21.593
	500.00	111.784	177.059	135.143	-243.044	20.958	-331.574	-258.916	-141.566	14.789
	600.00	116.877	197.910	143.907	-231.600	32.402	-350.346	-255.594	-118.402	10.308
	700.00	121.045	216.248	152.957	-219.699	44.303	-371.072	-251.930	-95.822	7.150
	800.00	124.719	232.655	161.912	-207.407	56.595	-393.531	-247.974	-73.787	4.818
	900.00	128.106	247.542	170.612	-194.764	69.238	-417.552	-243.752	-52.265	3.033
	993.00	131.095	260.285	178.421	-182.711	81.291	-441.174	-239.599	-32.683	1.719

References

Phase	H / S	C _p	Remarks
SOL	Nb1	Nb1,e	Tk1 MPT= 993.

ReO2

RHENIUM DIOXIDE

218.206

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	54.367	47.827	47.827	-448.943	0.000	-463.203	-448.943	-391.148	68.527
	300.00	54.596	48.164	47.828	-448.842	0.101	-463.292	-448.943	-390.789	68.042
	400.00	63.098	65.183	50.091	-442.906	6.037	-468.979	-448.538	-371.446	48.506
	500.00	67.752	79.804	54.608	-436.345	12.598	-476.247	-447.650	-352.269	36.801
	600.00	70.892	92.449	59.885	-429.405	19.538	-484.874	-446.538	-333.294	29.016
	700.00	73.317	103.565	65.347	-422.190	26.753	-494.686	-445.301	-314.517	23.470
	800.00	75.361	113.492	70.756	-414.754	34.189	-505.548	-443.979	-295.923	19.322
	900.00	77.183	122.475	76.011	-407.125	41.818	-517.353	-442.588	-277.499	16.106
	1000.00	78.868	130.695	81.074	-399.322	49.621	-530.017	-441.133	-259.233	13.541
	1100.00	80.462	138.288	85.935	-391.355	57.588	-543.471	-439.616	-241.116	11.450
	1200.00	81.996	145.355	90.595	-383.232	65.711	-557.658	-438.037	-223.139	9.713
	1300.00	83.486	151.977	95.065	-374.957	73.986	-572.528	-436.396	-205.297	8.249
	1400.00	84.945	158.218	99.355	-366.536	82.407	-588.040	-434.692	-187.584	6.999

References

Phase	H / S	C _p
SOL	Pa3,F1	Pa3

234.205

RHENIUM TRIOXIDE

ReO3

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	74.401	69.258	69.258	-589.107	0.000	-609.756	-589.107	-507.119	88.845
	300.00	74.627	69.719	69.259	-588.969	0.138	-609.885	-589.098	-506.610	88.209
	400.00	85.102	92.712	72.323	-580.951	8.156	-618.036	-588.096	-479.241	62.582
	500.00	92.194	112.515	78.428	-572.063	17.044	-628.321	-586.411	-452.212	47.242
	600.00	97.111	129.784	85.580	-562.585	26.522	-640.455	-584.340	-425.562	37.048
	700.00	100.746	145.039	93.006	-552.684	36.423	-654.211	-582.044	-399.278	29.794
	800.00	103.605	158.685	100.378	-542.461	46.646	-669.409	-579.604	-373.334	24.376
	900.00	105.972	171.029	107.553	-531.979	57.128	-685.905	-577.062	-347.701	20.180
	1000.00	108.014	182.302	114.472	-521.277	67.830	-703.579	-574.440	-322.357	16.838

References

Phase	H / S	C _p
SOL	Pa1	Pa1

484.410

DIRHENIUM HEPTAOXIDE

Re2O7

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-A	298.15	166.231	207.275	207.275	-1263.150	0.000	-1324.949	-1263.150	-1089.093	190.804
	300.00	166.640	208.305	207.279	-1262.842	0.308	-1325.334	-1263.126	-1088.013	189.440
	400.00	184.043	258.809	214.047	-1245.245	17.905	-1348.769	-1261.047	-1029.917	134.493
	413.00	185.864	264.724	215.549	-1242.841	20.309	-1352.172	-1260.689	-1022.411	129.311
SOL-B			0.203		0.084					
	413.00	187.493	264.927	215.549	-1242.757	20.393	-1352.172	-1260.605	-1022.411	129.311
	500.00	200.388	301.962	227.430	-1225.884	37.266	-1376.865	-1257.620	-972.515	101.598
	600.00	215.211	339.807	243.064	-1205.104	58.046	-1408.988	-1253.236	-915.889	79.735
LIQ			109.475		65.685					
	600.00	276.567	449.282	243.064	-1139.419	123.731	-1408.988	-1187.551	-915.889	79.735
	700.00	276.567	491.915	275.647	-1111.762	151.388	-1456.103	-1176.732	-871.473	65.030

References

Phase	H / S	C _p
SOL-A	Pa3	Pa3
SOL-B	Pa3	Pa3
LIQ	Pa3	Pa3

ReS2

RHENIUM DISULFIDE

250.339

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	65.889	60.668	60.668	-178.657	0.000	-196.745	-178.657	-166.740	29.212
	300.00	66.009	61.076	60.669	-178.535	0.122	-196.858	-178.666	-166.666	29.019
	400.00	70.780	80.785	63.324	-171.673	6.984	-203.987	-183.526	-162.421	21.210
	500.00	73.835	96.925	68.479	-164.434	14.223	-212.896	-186.706	-156.818	16.383
	600.00	76.215	110.604	74.388	-156.928	21.729	-223.290	-189.020	-150.603	13.111
	700.00	78.277	122.510	80.431	-149.201	29.456	-234.958	-190.636	-144.069	10.751
	800.00	80.168	133.088	86.364	-141.278	37.379	-247.748	-192.210	-137.311	8.965
	900.00	81.961	142.634	92.094	-133.171	45.486	-261.542	-299.348	-128.048	7.432
	1000.00	83.693	151.360	97.591	-124.888	53.769	-276.248	-297.621	-109.106	5.699
	1100.00	85.384	159.416	102.850	-116.434	62.223	-291.791	-295.793	-90.342	4.290
	1200.00	87.048	166.917	107.879	-107.812	70.845	-308.112	-293.863	-71.749	3.123
	1300.00	88.693	173.950	112.694	-99.025	79.632	-325.159	-291.834	-53.321	2.142
	1400.00	90.324	180.582	117.309	-90.074	88.583	-342.889	-289.705	-35.053	1.308
	1500.00	91.944	186.869	121.738	-80.960	97.697	-361.264	-287.478	-16.941	0.590

References

Phase	H / S	C _p
SOL	Mi1	Mi1

Re2S7

DIRHENIUM HEPTASULFIDE

596.876

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	200.739	167.360	167.360	-451.454	0.000	-501.352	-451.454	-412.669	72.298
	300.00	200.832	168.602	167.364	-451.083	0.371	-501.663	-451.471	-412.429	71.810
	400.00	205.853	227.065	175.301	-430.748	20.706	-521.574	-468.325	-398.612	52.053
	500.00	210.874	273.539	190.455	-409.912	41.542	-546.682	-480.032	-379.982	39.696
	600.00	215.894	312.430	207.629	-388.574	62.880	-576.032	-489.062	-359.058	31.259
	700.00	220.915	346.087	225.058	-366.733	84.721	-608.994	-495.835	-336.843	25.136

References

Phase	H / S	C _p
SOL	Mi1	Mi1

214.292

RHENIUM SILICON

ReSi

Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	51.226	55.354	55.354	–52.802	0.000	–69.306	–52.802	–52.805	9.251
	300.00	51.296	55.671	55.355	–52.707	0.095	–69.409	–52.791	–52.805	9.194
	400.00	54.089	70.848	57.406	–47.425	5.377	–75.764	–52.191	–52.899	6.908
	500.00	55.898	83.123	61.361	–41.921	10.881	–83.482	–51.580	–53.147	5.552
	600.00	57.321	93.444	65.870	–36.258	16.544	–92.324	–50.962	–53.518	4.659
	700.00	58.561	102.375	70.461	–30.463	22.339	–102.125	–50.339	–53.993	4.029
	800.00	59.703	110.270	74.953	–24.549	28.253	–112.765	–49.711	–54.558	3.562
	900.00	60.789	117.365	79.278	–18.524	34.278	–124.152	–49.079	–55.202	3.204
	1000.00	61.840	123.824	83.415	–12.392	40.410	–136.217	–48.444	–55.916	2.921
	1100.00	62.867	129.767	87.362	–6.157	46.645	–148.900	–47.804	–56.695	2.692
	1200.00	63.879	135.280	91.128	0.181	52.983	–162.156	–47.161	–57.531	2.504
	1300.00	64.880	140.433	94.725	6.619	59.421	–175.944	–46.515	–58.421	2.347
	1400.00	65.873	145.277	98.164	13.156	65.958	–190.232	–45.866	–59.362	2.215
	1500.00	66.860	149.856	101.459	19.793	72.595	–204.991	–45.213	–60.348	2.102

References

Phase	H / S	C _p	Remarks
SOL	C1	e	C1 DPT= 2153.

242.378

RHENIUM 2–SILICON

ReSi2

Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	64.202	74.057	74.057	–90.374	0.000	–112.454	–90.374	–90.342	15.827
	300.00	64.307	74.454	74.058	–90.255	0.119	–112.591	–90.376	–90.341	15.730
	400.00	68.381	93.573	76.637	–83.600	6.774	–121.029	–90.525	–90.309	11.793
	500.00	70.860	109.116	81.627	–76.630	13.744	–131.188	–90.727	–90.233	9.427
	600.00	72.711	122.205	87.328	–69.448	20.926	–142.771	–90.967	–90.112	7.845
	700.00	74.266	133.533	93.137	–62.097	28.277	–155.570	–91.237	–89.949	6.712
	800.00	75.663	143.542	98.824	–54.600	35.774	–169.433	–91.534	–89.744	5.860
	900.00	76.968	152.530	104.301	–46.968	43.406	–184.245	–91.856	–89.502	5.195
	1000.00	78.216	160.704	109.538	–39.208	51.166	–199.912	–92.202	–89.222	4.660
	1100.00	79.426	168.216	114.536	–31.326	59.048	–216.363	–92.571	–88.906	4.222
	1200.00	80.612	175.178	119.303	–23.324	67.050	–233.537	–92.963	–88.556	3.855
	1300.00	81.779	181.677	123.854	–15.204	75.170	–251.384	–93.377	–88.172	3.543
	1400.00	82.933	187.779	128.204	–6.968	83.406	–269.859	–93.813	–87.755	3.274
	1500.00	84.078	193.540	132.369	1.382	91.756	–288.928	–94.271	–87.306	3.040
	1600.00	85.215	199.003	136.365	9.847	100.221	–308.558	–94.751	–86.826	2.835
	1700.00	86.347	204.203	140.203	18.425	108.799	–328.720	–195.608	–85.422	2.625
	1800.00	87.475	209.170	143.898	27.116	117.490	–349.390	–195.678	–78.939	2.291
	1900.00	88.599	213.930	147.459	35.920	126.294	–370.547	–195.690	–72.452	1.992
	2000.00	89.720	218.503	150.898	44.836	135.210	–392.170	–195.645	–65.967	1.723

References

Phase	H / S	C _p	Remarks
SOL	C1	e	C1 MPT= 2253.

Re5Si3

5-RHENIUM 3-SILICON

1015.291

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	188.448	255.852	255.852	-157.599	0.000	-233.881	-157.599	-162.596	28.486
	300.00	188.726	257.018	255.855	-157.250	0.349	-234.356	-157.595	-162.627	28.316
	400.00	200.079	313.007	263.412	-137.761	19.838	-262.964	-157.272	-164.347	21.462
	500.00	207.761	358.518	278.023	-117.351	40.248	-296.610	-156.770	-166.171	17.360
	600.00	213.998	396.963	294.724	-96.256	61.343	-334.433	-156.147	-168.108	14.635
	700.00	219.552	430.374	311.767	-74.574	83.025	-375.836	-155.427	-170.157	12.697
	800.00	224.744	460.033	328.481	-52.357	105.242	-420.383	-154.623	-172.316	11.251
	900.00	229.723	486.793	344.608	-29.633	127.966	-467.746	-153.742	-174.579	10.132
	1000.00	234.572	511.248	360.066	-6.417	151.182	-517.665	-152.788	-176.945	9.243
	1100.00	239.334	533.829	374.849	17.279	174.878	-569.933	-151.762	-179.410	8.519
	1200.00	244.039	554.856	388.984	41.448	199.047	-624.380	-150.668	-181.971	7.921
	1300.00	248.702	574.574	402.509	66.085	223.684	-680.861	-149.506	-184.626	7.418
	1400.00	253.335	593.175	415.470	91.187	248.786	-739.257	-148.277	-187.374	6.991
	1500.00	257.946	610.810	427.910	116.752	274.351	-799.464	-146.982	-190.211	6.624

References

Phase	H / S	C _p	Remarks
SOL	C1	e	C1 MPT= 2233.

Re2Te5

DIRHENIUM PENTATELLURIDE

1010.414

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	175.612	251.877	251.877	-94.140	0.000	-169.237	-94.140	-73.669	12.907
	300.00	175.728	252.963	251.880	-93.815	0.325	-169.704	-94.147	-73.542	12.805
	400.00	182.004	304.377	258.848	-75.928	18.212	-197.679	-94.806	-66.591	8.696
	500.00	188.280	345.664	272.212	-57.414	36.726	-230.246	-96.051	-59.405	6.206
	600.00	194.556	380.546	287.434	-38.272	55.868	-266.600	-97.882	-51.914	4.519
	700.00	200.832	411.008	302.956	-18.503	75.637	-306.209	-100.299	-44.069	3.289
	800.00	207.108	438.236	318.193	1.894	96.034	-348.694	-191.410	-26.439	1.726
	900.00	213.384	462.992	332.927	22.919	117.059	-393.774	-194.878	-5.604	0.325
	1000.00	219.660	485.799	347.088	44.571	138.711	-441.228	-197.827	15.590	-0.814
	1100.00	225.936	507.029	360.674	66.851	160.991	-490.881	-200.257	37.053	-1.760
	1200.00	232.212	526.957	373.709	89.758	183.898	-542.590	-202.168	58.715	-2.556

References

Phase	H / S	C _p
SOL	Tk1/Ku1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _r [–]
SOL	298.15	76.196	110.039	110.039	–135.771	0.000	–168.579	–135.771	–133.551	23.397
	300.00	76.236	110.511	110.041	–135.630	0.141	–168.783	–135.773	–133.537	23.251
	400.00	78.297	132.729	113.056	–127.902	7.869	–180.993	–135.850	–132.779	17.339
	500.00	80.249	150.411	118.817	–119.974	15.797	–195.180	–135.899	–132.005	13.790
	600.00	82.158	165.212	125.349	–111.853	23.918	–210.980	–135.932	–131.223	11.424
	700.00	84.046	178.018	131.978	–103.543	32.228	–228.156	–135.958	–130.436	9.733
	800.00	85.924	189.364	138.456	–95.045	40.726	–246.536	–135.981	–129.645	8.465
	900.00	87.796	199.592	144.689	–86.358	49.413	–265.992	–136.002	–128.852	7.478
	1000.00	89.663	208.939	150.654	–77.486	58.285	–286.425	–136.019	–128.056	6.689
	1100.00	91.528	217.572	156.350	–68.426	67.345	–307.756	–136.032	–127.259	6.043
	1200.00	93.391	225.616	161.790	–59.180	76.591	–329.920	–136.041	–126.461	5.505
	1300.00	95.253	233.165	166.993	–49.748	86.023	–352.862	–136.046	–125.663	5.049
	1400.00	97.114	240.292	171.977	–40.129	95.642	–376.539	–136.049	–124.864	4.659
	1500.00	98.975	247.056	176.759	–30.325	105.446	–400.909	–136.050	–124.065	4.320

References

Phase	H / S	C _p
SOL	Ku1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	24.976	31.505	31.506	0.000	0.000	-9.393	0.000	0.000	0.000
	300.00	24.999	31.660	31.506	0.046	0.046	-9.452	0.000	0.000	0.000
	400.00	26.090	39.006	32.500	2.602	2.602	-13.000	0.000	0.000	0.000
	500.00	27.114	44.938	34.413	5.262	5.262	-17.206	0.000	0.000	0.000
	600.00	28.135	49.971	36.596	8.025	8.025	-21.958	0.000	0.000	0.000
	700.00	29.143	54.384	38.829	10.889	10.889	-27.180	0.000	0.000	0.000
	800.00	30.126	58.340	41.024	13.853	13.853	-32.820	0.000	0.000	0.000
	900.00	31.078	61.944	43.152	16.913	16.913	-38.836	0.000	0.000	0.000
	1000.00	31.992	65.266	45.199	20.067	20.067	-45.199	0.000	0.000	0.000
	1100.00	32.866	68.356	47.165	23.310	23.310	-51.882	0.000	0.000	0.000
	1200.00	33.695	71.252	49.053	26.639	26.639	-58.864	0.000	0.000	0.000
	1300.00	34.480	73.980	50.867	30.048	30.048	-66.127	0.000	0.000	0.000
	1400.00	35.219	76.563	52.611	33.533	33.533	-73.655	0.000	0.000	0.000
	1500.00	35.910	79.017	54.290	37.090	37.090	-81.435	0.000	0.000	0.000
	1600.00	36.555	81.355	55.909	40.714	40.714	-89.454	0.000	0.000	0.000
	1700.00	37.151	83.589	57.472	44.399	44.399	-97.703	0.000	0.000	0.000
	1800.00	37.699	85.729	58.983	48.142	48.142	-106.169	0.000	0.000	0.000
	1900.00	38.198	87.780	60.445	51.937	51.937	-114.845	0.000	0.000	0.000
	2000.00	38.649	89.751	61.861	55.780	55.780	-123.723	0.000	0.000	0.000
	2100.00	39.051	91.647	63.235	59.666	59.666	-132.793	0.000	0.000	0.000
	2200.00	39.405	93.472	64.568	63.589	63.589	-142.050	0.000	0.000	0.000
	2233.00	39.510	94.060	65.000	64.891	64.891	-145.144	0.000	0.000	0.000
LIQ			9.623		21.489					
	2233.00	41.840	103.683	65.000	86.380	86.380	-145.144	0.000	0.000	0.000
	2300.00	41.840	104.920	66.144	89.183	89.183	-152.132	0.000	0.000	0.000
	2400.00	41.840	106.701	67.797	93.367	93.367	-162.714	0.000	0.000	0.000
	2500.00	41.840	108.409	69.388	97.551	97.551	-173.470	0.000	0.000	0.000
	2600.00	41.840	110.050	70.921	101.735	101.735	-184.393	0.000	0.000	0.000
	2700.00	41.840	111.629	72.399	105.919	105.919	-195.478	0.000	0.000	0.000
	2800.00	41.840	113.150	73.828	110.103	110.103	-206.717	0.000	0.000	0.000
	2900.00	41.840	114.618	75.209	114.287	114.287	-218.106	0.000	0.000	0.000
	3000.00	41.840	116.037	76.546	118.471	118.471	-229.639	0.000	0.000	0.000
	3100.00	41.840	117.409	77.843	122.655	122.655	-241.312	0.000	0.000	0.000
	3200.00	41.840	118.737	79.100	126.839	126.839	-253.120	0.000	0.000	0.000
	3300.00	41.840	120.025	80.321	131.023	131.023	-265.058	0.000	0.000	0.000
	3400.00	41.840	121.274	81.507	135.207	135.207	-277.123	0.000	0.000	0.000
	3500.00	41.840	122.487	82.660	139.391	139.391	-289.311	0.000	0.000	0.000
	3600.00	41.840	123.665	83.783	143.575	143.575	-301.619	0.000	0.000	0.000
	3700.00	41.840	124.812	84.877	147.759	147.759	-314.043	0.000	0.000	0.000
	3800.00	41.840	125.927	85.942	151.943	151.943	-326.581	0.000	0.000	0.000
	3900.00	41.840	127.014	86.982	156.127	156.127	-339.228	0.000	0.000	0.000
	3967.00	41.840	127.727	87.664	158.931	158.931	-347.762	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL	Hu1	Hu1	
LIQ	Hu1	Hu1	BPT= 3967., L= 493.26 kJ

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f kJ / mol	ΔG _f kJ / mol	log K _r [- -]
GAS	298.15	21.017	185.820	185.820	553.125	0.000	497.723	553.125	507.116	-88.845
	300.00	21.020	185.951	185.821	553.164	0.039	497.379	553.118	506.831	-88.247
	400.00	21.616	192.064	186.650	555.290	2.165	478.465	552.688	491.465	-64.179
	500.00	22.558	196.986	188.240	557.498	4.373	459.005	552.236	476.211	-49.749
	600.00	23.531	201.185	190.056	559.803	6.678	439.092	551.778	461.049	-40.138
	700.00	24.432	204.882	191.915	562.202	9.077	418.785	551.313	445.965	-33.278
	800.00	25.223	208.197	193.746	564.685	11.560	398.128	550.833	430.947	-28.138
	900.00	25.893	211.208	195.522	567.242	14.117	377.155	550.329	415.992	-24.144
	1000.00	26.444	213.965	197.230	569.860	16.735	355.895	549.793	401.094	-20.951
	1100.00	26.882	216.507	198.869	572.527	19.402	334.369	549.217	386.251	-18.342
	1200.00	27.217	218.861	200.438	575.233	22.108	312.600	548.594	371.463	-16.169
	1300.00	27.460	221.050	201.940	577.968	24.843	290.603	547.920	356.729	-14.334
	1400.00	27.624	223.091	203.379	580.723	27.598	268.394	547.189	342.049	-12.762
	1500.00	27.721	225.001	204.757	583.490	30.365	245.989	546.400	327.424	-11.402
	1600.00	27.766	226.792	206.079	586.265	33.140	223.398	545.551	312.853	-10.214
	1700.00	27.772	228.475	207.348	589.042	35.917	200.634	544.643	298.337	-9.167
	1800.00	27.752	230.062	208.566	591.818	38.693	177.706	543.676	283.876	-8.238
	1900.00	27.722	231.562	209.737	594.592	41.467	154.624	542.655	269.470	-7.408
	2000.00	27.695	232.983	210.864	597.363	44.238	131.397	541.583	255.119	-6.663
	2100.00	27.685	234.334	211.950	600.132	47.007	108.030	540.466	240.823	-5.990
	2200.00	27.708	235.622	212.997	602.901	49.776	84.532	539.312	226.582	-5.380
	2300.00	27.696	236.854	214.008	605.672	52.547	60.908	516.488	213.040	-4.838
	2400.00	27.689	238.032	214.984	608.441	55.316	37.163	515.073	199.877	-4.350
	2500.00	27.689	239.163	215.929	611.210	58.085	13.303	513.658	186.773	-3.902
	2600.00	27.695	240.249	216.844	613.979	60.854	-10.668	512.243	173.725	-3.490
	2700.00	27.708	241.294	217.730	616.749	63.624	-34.746	510.829	160.732	-3.110
	2800.00	27.727	242.302	218.590	619.520	66.395	-58.926	509.417	147.791	-2.757
	2900.00	27.754	243.276	219.424	622.294	69.169	-83.205	508.007	134.901	-2.430
	3000.00	27.786	244.217	220.235	625.071	71.946	-107.580	506.600	122.059	-2.125
	3100.00	27.823	245.129	221.023	627.852	74.727	-132.047	505.196	109.265	-1.841
	3200.00	27.864	246.013	221.791	630.636	77.511	-156.605	503.797	96.515	-1.575
	3300.00	27.910	246.871	222.538	633.425	80.300	-181.249	502.401	83.809	-1.327
	3400.00	27.959	247.705	223.266	636.218	83.093	-205.978	501.011	71.145	-1.093
	3500.00	28.011	248.516	223.976	639.017	85.892	-230.789	499.625	58.522	-0.873
	3600.00	28.066	249.306	224.668	641.820	88.695	-255.681	498.245	45.939	-0.667
	3700.00	28.122	250.076	225.345	644.630	91.505	-280.650	496.871	33.394	-0.471
	3800.00	28.179	250.826	226.005	647.445	94.320	-305.695	495.502	20.886	-0.287
	3900.00	28.238	251.559	226.651	650.266	97.141	-330.814	494.138	8.414	-0.113
	4000.00	28.297	252.275	227.283	653.092	99.967	-356.006	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

RhCl₂[g]**RHODIUM DICHLORIDE (GAS)**

173.811

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	53.808	288.513	288.513	126.775	0.000	40.755	126.775	116.671	-20.440
	300.00	53.864	288.846	288.514	126.875	0.100	40.221	126.766	116.608	-20.303
	400.00	56.226	304.689	290.658	132.388	5.613	10.512	126.255	113.299	-14.795
	500.00	57.953	317.428	294.779	138.099	11.324	-20.614	125.736	110.119	-11.504
	600.00	59.430	328.127	299.469	143.970	17.195	-52.906	125.209	107.046	-9.319
	700.00	60.790	337.391	304.239	149.982	23.207	-86.192	124.680	104.060	-7.765
	800.00	62.086	345.594	308.905	156.126	29.351	-120.349	124.155	101.150	-6.604
	900.00	63.346	352.980	313.399	162.398	35.623	-155.284	123.641	98.306	-5.706
	1000.00	64.584	359.718	317.699	168.794	42.019	-190.924	123.142	95.518	-4.989
	1100.00	65.806	365.931	321.805	175.314	48.539	-227.210	122.665	92.779	-4.406
	1200.00	67.019	371.709	325.725	181.955	55.180	-264.095	122.214	90.082	-3.921
	1300.00	68.224	377.121	329.473	188.718	61.943	-301.540	121.794	87.421	-3.513
	1400.00	69.424	382.221	333.060	195.600	68.825	-339.509	121.410	84.792	-3.164
	1500.00	70.620	387.051	336.500	202.602	75.827	-377.975	121.067	82.189	-2.862
	1600.00	71.814	391.647	339.804	209.724	82.949	-416.912	120.769	79.607	-2.599
	1700.00	73.005	396.037	342.984	216.965	90.190	-456.297	120.521	77.042	-2.367
	1800.00	74.194	400.243	346.049	224.325	97.550	-496.113	120.328	74.490	-2.162
	1900.00	75.382	404.286	349.008	231.804	105.029	-536.341	120.194	71.948	-1.978
	2000.00	76.569	408.183	351.870	239.401	112.626	-576.965	120.124	69.410	-1.813

References

Phase	H / S	C _p
GAS	Be3	Be3,e

RhCl₃**RHODIUM TRICHLORIDE**

209.264

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	92.207	126.775	126.775	-299.202	0.000	-337.000	-299.202	-227.823	39.914
	300.00	92.522	127.347	126.777	-299.031	0.171	-337.235	-299.172	-227.381	39.590
	400.00	104.558	155.803	130.575	-289.111	10.091	-351.432	-297.008	-203.752	26.607
	500.00	111.612	179.946	138.099	-278.278	20.924	-368.251	-294.192	-180.754	18.883
	600.00	116.706	200.764	146.848	-266.852	32.350	-387.311	-290.981	-158.362	13.787
	700.00	120.873	219.076	155.884	-254.968	44.234	-408.321	-287.476	-136.532	10.188
	800.00	124.547	235.460	164.825	-242.694	56.508	-431.062	-283.723	-115.222	7.523
	900.00	127.934	250.328	173.512	-230.068	69.134	-455.362	-279.747	-94.396	5.479
	1000.00	131.143	263.974	181.885	-217.113	82.089	-481.087	-275.557	-74.024	3.867
	1100.00	134.236	276.619	189.929	-203.843	95.359	-508.124	-271.161	-54.082	2.568
	1200.00	137.249	288.429	197.651	-190.268	108.934	-536.383	-266.561	-34.549	1.504

References

Phase	H / S	C _p
SOL	Nb1/Be3	e

209.264

RHODIUM TRICHLORIDE (GAS)

RhCl3[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	71.195	373.644	373.644	66.944	0.000	-44.458	66.944	64.719	-11.338
	300.00	71.271	374.085	373.646	67.076	0.132	-45.150	66.935	64.705	-11.266
	400.00	74.365	395.051	376.483	74.371	7.427	-83.649	66.474	64.031	-8.362
	500.00	76.451	411.880	381.935	81.917	14.973	-124.023	66.003	63.474	-6.631
	600.00	78.140	425.972	388.131	89.648	22.704	-165.935	65.519	63.014	-5.486
	700.00	79.642	438.132	394.425	97.539	30.595	-209.154	65.030	62.635	-4.674
	800.00	81.044	448.859	400.572	105.574	38.630	-253.513	64.544	62.326	-4.069
	900.00	82.388	458.482	406.481	113.745	46.801	-298.889	64.067	62.078	-3.603
	1000.00	83.695	467.231	412.125	122.050	55.106	-345.181	63.605	61.882	-3.232
	1100.00	84.980	475.268	417.505	130.484	63.540	-392.311	63.166	61.731	-2.931
	1200.00	86.248	482.717	422.632	139.045	72.101	-440.215	62.753	61.619	-2.682
	1300.00	87.505	489.670	427.525	147.733	80.789	-488.838	62.372	61.540	-2.473
	1400.00	88.753	496.200	432.199	156.546	89.602	-538.135	62.028	61.489	-2.294
	1500.00	89.996	502.366	436.673	165.483	98.539	-588.066	61.725	61.462	-2.140
	1600.00	91.234	508.214	440.963	174.545	107.601	-638.597	61.469	61.453	-2.006
	1700.00	92.468	513.782	445.084	183.730	116.786	-689.699	61.264	61.458	-1.888
	1800.00	93.699	519.102	449.050	193.038	126.094	-741.346	61.114	61.474	-1.784
	1900.00	94.929	524.201	452.872	202.470	135.526	-793.512	61.024	61.497	-1.691
	2000.00	96.156	529.102	456.562	212.024	145.080	-846.179	60.998	61.523	-1.607

References

Phase	H / S	C _p
GAS	Be3	Be3,e

134.904

RHODIUM DIOXIDE (GAS)

RhO2[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	43.044	263.701	263.701	-184.000	0.000	-262.623	-184.000	-192.065	33.649
	300.00	43.235	263.968	263.702	-183.920	0.080	-263.111	-184.021	-192.115	33.450
	400.00	49.947	277.464	265.497	-179.213	4.787	-290.199	-184.841	-194.676	25.422
	500.00	53.053	288.981	269.073	-174.046	9.954	-318.537	-185.393	-197.068	20.588
	600.00	54.741	298.817	273.231	-168.649	15.351	-347.939	-185.917	-199.355	17.355
	700.00	55.758	307.338	277.509	-163.120	20.880	-378.256	-186.507	-201.549	15.040
	800.00	56.419	314.829	281.715	-157.509	26.491	-409.372	-187.197	-203.652	13.297
	900.00	56.871	321.502	285.772	-151.843	32.157	-441.195	-187.997	-205.662	11.936
	1000.00	57.195	327.512	289.651	-146.139	37.861	-473.651	-188.909	-207.577	10.843
	1100.00	57.435	332.975	293.345	-140.407	43.593	-506.679	-189.929	-209.395	9.943
	1200.00	57.617	337.981	296.859	-134.654	49.346	-540.230	-191.053	-211.116	9.190
	1300.00	57.759	342.598	300.202	-128.884	55.116	-574.262	-192.276	-212.738	8.548
	1400.00	57.872	346.883	303.385	-123.103	60.897	-608.739	-193.593	-214.264	7.994
	1500.00	57.962	350.879	306.419	-117.311	66.689	-643.629	-194.999	-215.692	7.511

References

Phase	H / S	C _p
GAS	Nb1/Ku1	e

Rh2O3

DIRHODIUM TRIOXIDE

253.809

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
SOL	298.15	103.803	106.274	106.274	-355.640	0.000	-387.325	-355.640	-276.792	48.493
	300.00	103.910	106.916	106.276	-355.448	0.192	-387.523	-355.622	-276.303	48.109
	400.00	109.684	137.600	110.420	-344.768	10.872	-399.808	-354.511	-250.023	32.650
	500.00	115.457	162.695	118.437	-333.511	22.129	-414.859	-353.163	-224.053	23.407
	600.00	121.231	184.256	127.650	-321.677	33.963	-432.230	-351.592	-198.375	17.270
	700.00	127.005	203.377	137.127	-309.265	46.375	-451.629	-349.791	-172.978	12.908
	800.00	132.779	220.714	146.508	-296.276	59.364	-472.846	-347.734	-147.856	9.654
	900.00	138.553	236.686	155.652	-282.709	72.931	-495.726	-345.397	-123.008	7.139
	1000.00	144.327	251.583	164.508	-268.565	87.075	-520.148	-342.753	-98.437	5.142
	1100.00	150.101	265.610	173.067	-253.844	101.796	-546.014	-339.782	-74.147	3.521
	1200.00	155.875	278.918	181.338	-238.545	117.095	-573.246	-336.464	-50.142	2.183
	1300.00	161.649	291.622	189.337	-222.669	132.971	-601.778	-332.780	-26.429	1.062

References

Phase	H / S	C _p
SOL	Tk1	Ku1,e

Rh3U

3-RHODIUM URANIUM

546.745

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
SOL	298.15	102.614	148.114	148.114	-259.408	0.000	-303.568	-259.408	-260.394	45.620
	300.00	102.792	148.749	148.116	-259.218	0.190	-303.843	-259.408	-260.400	45.340
	400.00	110.097	179.408	152.246	-248.543	10.865	-320.307	-259.269	-260.746	34.050
	500.00	115.119	204.540	160.267	-237.272	22.136	-339.541	-259.060	-261.140	27.281
	600.00	119.242	225.901	169.469	-225.549	33.859	-361.090	-258.959	-261.568	22.771
	700.00	122.940	244.564	178.891	-213.437	45.971	-384.632	-259.074	-261.997	19.550
	800.00	126.413	261.209	188.159	-200.968	58.440	-409.935	-259.482	-262.390	17.132
	900.00	129.754	276.292	197.127	-188.159	71.249	-436.822	-260.243	-262.712	15.247
	1000.00	133.014	290.133	205.744	-175.020	84.388	-465.152	-263.818	-262.764	13.725
	1100.00	136.220	302.961	214.006	-161.558	97.850	-494.815	-268.894	-262.401	12.460
	1200.00	139.389	314.950	221.924	-147.777	111.631	-525.717	-268.927	-261.808	11.396

References

Phase	H / S	C _p
SOL	Ku1	e

222.018

RADON (MONOATOMIC GAS)

Rn[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _r [— —]
GAS	298.15	20.786	176.231	176.231	0.000	0.000	–52.543	0.000	0.000	0.000
	300.00	20.786	176.359	176.231	0.038	0.038	–52.869	0.000	0.000	0.000
	400.00	20.786	182.339	177.046	2.117	2.117	–70.819	0.000	0.000	0.000
	500.00	20.786	186.977	178.586	4.196	4.196	–89.293	0.000	0.000	0.000
	600.00	20.786	190.767	180.310	6.274	6.274	–108.186	0.000	0.000	0.000
	700.00	20.786	193.971	182.039	8.353	8.353	–127.427	0.000	0.000	0.000
	800.00	20.786	196.747	183.708	10.432	10.432	–146.966	0.000	0.000	0.000
	900.00	20.786	199.195	185.295	12.510	12.510	–166.766	0.000	0.000	0.000
	1000.00	20.786	201.385	186.796	14.589	14.589	–186.796	0.000	0.000	0.000
	1100.00	20.786	203.366	188.214	16.667	16.667	–207.036	0.000	0.000	0.000
	1200.00	20.786	205.175	189.553	18.746	18.746	–227.464	0.000	0.000	0.000
	1300.00	20.786	206.839	190.820	20.825	20.825	–248.066	0.000	0.000	0.000
	1400.00	20.786	208.379	192.020	22.903	22.903	–268.828	0.000	0.000	0.000
	1500.00	20.786	209.813	193.159	24.982	24.982	–289.738	0.000	0.000	0.000
	1600.00	20.786	211.155	194.242	27.060	27.060	–310.787	0.000	0.000	0.000
	1700.00	20.786	212.415	195.274	29.139	29.139	–331.966	0.000	0.000	0.000
	1800.00	20.786	213.603	196.260	31.218	31.218	–353.268	0.000	0.000	0.000
	1900.00	20.786	214.727	197.203	33.296	33.296	–374.685	0.000	0.000	0.000
	2000.00	20.786	215.793	198.106	35.375	35.375	–396.211	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

Ru

RUTHENIUM

101.070

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	24.043	28.535	28.535	0.000	0.000	-8.508	0.000	0.000	0.000
	300.00	24.047	28.684	28.535	0.044	0.044	-8.561	0.000	0.000	0.000
	400.00	24.396	35.644	29.482	2.465	2.465	-11.793	0.000	0.000	0.000
	500.00	24.887	41.139	31.283	4.928	4.928	-15.641	0.000	0.000	0.000
	600.00	25.446	45.725	33.318	7.445	7.445	-19.991	0.000	0.000	0.000
	700.00	26.050	49.693	35.380	10.019	10.019	-24.766	0.000	0.000	0.000
	800.00	26.688	53.213	37.393	12.656	12.656	-29.914	0.000	0.000	0.000
	900.00	27.355	56.394	39.330	15.358	15.358	-35.397	0.000	0.000	0.000
	1000.00	28.049	59.312	41.184	18.128	18.128	-41.184	0.000	0.000	0.000
	1100.00	28.768	62.019	42.957	20.968	20.968	-47.253	0.000	0.000	0.000
	1200.00	29.511	64.554	44.652	23.882	23.882	-53.583	0.000	0.000	0.000
	1300.00	30.277	66.946	46.276	26.871	26.871	-60.159	0.000	0.000	0.000
	1400.00	31.067	69.219	47.834	29.938	29.938	-66.968	0.000	0.000	0.000
	1500.00	31.879	71.390	49.333	33.085	33.085	-73.999	0.000	0.000	0.000
	1600.00	32.715	73.474	50.777	36.315	36.315	-81.243	0.000	0.000	0.000
	1700.00	33.876	75.494	52.172	39.649	39.649	-88.692	0.000	0.000	0.000
	1800.00	34.953	77.461	53.522	43.090	43.090	-96.340	0.000	0.000	0.000
	1900.00	36.031	79.380	54.833	46.639	46.639	-104.182	0.000	0.000	0.000
	2000.00	37.108	81.255	56.107	50.296	50.296	-112.214	0.000	0.000	0.000
	2100.00	38.185	83.092	57.349	54.061	54.061	-120.432	0.000	0.000	0.000
	2200.00	39.263	84.893	58.560	57.933	57.933	-128.831	0.000	0.000	0.000
	2300.00	40.340	86.662	59.743	61.913	61.913	-137.409	0.000	0.000	0.000
	2400.00	41.417	88.402	60.901	66.001	66.001	-146.163	0.000	0.000	0.000
	2500.00	42.495	90.114	62.036	70.197	70.197	-155.089	0.000	0.000	0.000
	2523.00	42.743	90.505	62.293	71.177	71.177	-157.166	0.000	0.000	0.000
			9.623		24.280					
LIQ	2523.00	41.840	100.128	62.293	95.457	95.457	-157.166	0.000	0.000	0.000
	2600.00	41.840	101.386	63.433	98.679	98.679	-164.925	0.000	0.000	0.000
	2700.00	41.840	102.965	64.868	102.863	102.863	-175.143	0.000	0.000	0.000
	2800.00	41.840	104.487	66.256	107.047	107.047	-185.516	0.000	0.000	0.000
	2900.00	41.840	105.955	67.599	111.231	111.231	-196.038	0.000	0.000	0.000
	3000.00	41.840	107.373	68.902	115.415	115.415	-206.705	0.000	0.000	0.000
	3100.00	41.840	108.745	70.165	119.599	119.599	-217.511	0.000	0.000	0.000
	3200.00	41.840	110.074	71.391	123.783	123.783	-228.453	0.000	0.000	0.000
	3300.00	41.840	111.361	72.583	127.967	127.967	-239.525	0.000	0.000	0.000
	3400.00	41.840	112.610	73.742	132.151	132.151	-250.723	0.000	0.000	0.000
	3500.00	41.840	113.823	74.870	136.335	136.335	-262.045	0.000	0.000	0.000
	3600.00	41.840	115.002	75.969	140.519	140.519	-273.487	0.000	0.000	0.000
	3700.00	41.840	116.148	77.039	144.703	144.703	-285.045	0.000	0.000	0.000
	3800.00	41.840	117.264	78.083	148.887	148.887	-296.715	0.000	0.000	0.000
	3900.00	41.840	118.351	79.102	153.071	153.071	-308.496	0.000	0.000	0.000
	4000.00	41.840	119.410	80.096	157.255	157.255	-320.385	0.000	0.000	0.000
	4100.00	41.840	120.443	81.068	161.439	161.439	-332.378	0.000	0.000	0.000
	4200.00	41.840	121.451	82.017	165.623	165.623	-344.472	0.000	0.000	0.000
	4300.00	41.840	122.436	82.946	169.807	169.807	-356.667	0.000	0.000	0.000
	4400.00	41.840	123.398	83.854	173.991	173.991	-368.959	0.000	0.000	0.000
	4419.00	41.840	123.578	84.025	174.786	174.786	-371.305	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL	Hu1	Hu1	
LIQ	Hu1	Hu1	BPT= 4419., L= 595.54 kJ

101.070		RUTHENIUM (GAS)								Ru[g]
Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[—————]	J / (K mol)	—————]	[—————]	kJ / mol	—————]			[-]
GAS	298.15	21.523	186.502	186.502	651.449	0.000	595.843	651.449	604.351	-105.880
	300.00	21.539	186.636	186.503	651.489	0.040	595.498	651.444	604.059	-105.176
	400.00	22.649	192.976	187.360	653.696	2.247	576.505	651.231	588.298	-76.824
	500.00	23.802	198.157	189.016	656.019	4.570	556.941	651.091	572.582	-59.817
	600.00	24.757	202.584	190.917	658.449	7.000	536.899	651.005	556.889	-48.482
	700.00	25.467	206.457	192.867	660.962	9.513	516.442	650.943	541.208	-40.385
	800.00	25.947	209.892	194.784	663.535	12.086	495.622	650.879	525.536	-34.314
	900.00	26.231	212.966	196.637	666.145	14.696	474.476	650.788	509.873	-29.592
	1000.00	26.362	215.737	198.410	668.776	17.327	453.039	650.648	494.223	-25.816
	1100.00	26.387	218.252	200.102	671.414	19.965	431.337	650.446	478.590	-22.726
	1200.00	26.356	220.547	201.711	674.052	22.603	409.396	650.170	462.978	-20.153
	1300.00	26.321	222.655	203.242	676.685	25.236	387.234	649.814	447.393	-17.976
	1400.00	26.332	224.605	204.699	679.317	27.868	364.870	649.379	431.838	-16.112
	1500.00	26.372	226.423	206.088	681.952	30.503	342.317	648.867	416.316	-14.497
	1600.00	26.443	228.127	207.412	684.593	33.144	319.589	648.278	400.832	-13.086
	1700.00	26.564	229.734	208.679	687.242	35.793	296.695	647.594	385.387	-11.841
	1800.00	26.738	231.257	209.891	689.907	38.458	273.645	646.817	369.985	-10.737
	1900.00	26.963	232.708	211.054	692.592	41.143	250.446	645.952	354.628	-9.749
	2000.00	27.231	234.098	212.172	695.301	43.852	227.105	645.005	339.320	-8.862
	2100.00	27.535	235.434	213.248	698.039	46.590	203.628	643.978	324.060	-8.061
	2200.00	27.866	236.722	214.286	700.809	49.360	180.020	642.876	308.852	-7.333
	2300.00	28.215	237.968	215.288	703.613	52.164	156.285	641.700	293.695	-6.670
	2400.00	28.576	239.177	216.259	706.452	55.003	132.428	640.451	278.591	-6.063
	2500.00	28.944	240.351	217.199	709.328	57.879	108.451	639.132	263.540	-5.506
	2600.00	29.311	241.493	218.112	712.241	60.792	84.359	613.562	249.283	-5.008
	2700.00	29.675	242.606	218.998	715.190	63.741	60.154	612.328	235.296	-4.552
	2800.00	30.032	243.692	219.861	718.176	66.727	35.838	611.129	221.354	-4.129
	2900.00	30.378	244.752	220.701	721.196	69.747	11.416	609.966	207.454	-3.737
	3000.00	30.712	245.787	221.520	724.251	72.802	-13.111	608.836	193.594	-3.371
	3100.00	31.031	246.800	222.319	727.338	75.889	-37.741	607.740	179.771	-3.029
	3200.00	31.335	247.790	223.100	730.457	79.008	-62.470	606.674	165.982	-2.709
	3300.00	31.622	248.758	223.863	733.605	82.156	-87.298	605.638	152.227	-2.410
	3400.00	31.893	249.706	224.609	736.781	85.332	-112.221	604.630	138.502	-2.128
	3500.00	32.146	250.635	225.339	739.983	88.534	-137.238	603.648	124.807	-1.863
	3600.00	32.383	251.544	226.055	743.209	91.760	-162.348	602.690	111.139	-1.613
	3700.00	32.603	252.434	226.756	746.459	95.010	-187.547	601.756	97.498	-1.376
	3800.00	32.808	253.306	227.443	749.729	98.280	-212.834	600.843	83.882	-1.153
	3900.00	32.997	254.161	228.117	753.020	101.571	-238.207	599.949	70.289	-0.941
	4000.00	33.172	254.998	228.779	756.328	104.879	-263.665	599.074	56.719	-0.741
	4100.00	33.334	255.820	229.428	759.654	108.205	-289.206	598.215	43.171	-0.550
	4200.00	33.485	256.625	230.066	762.995	111.546	-314.829	597.372	29.644	-0.369
	4300.00	33.624	257.414	230.693	766.350	114.901	-340.531	596.544	16.136	-0.196
	4400.00	33.755	258.189	231.309	769.719	118.270	-366.311	595.729	2.648	-0.031
	4500.00	33.878	258.949	231.915	773.101	121.652	-392.168	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

RuCl3

RUTHENIUM TRICHLORIDE

207.428

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL-A	298.15	92.207	127.085	127.085	-230.120	0.000	-268.010	-230.120	-159.719	27.982
	300.00	92.522	127.656	127.087	-229.949	0.171	-268.246	-230.088	-159.283	27.734
	400.00	104.558	156.113	130.885	-220.029	10.091	-282.474	-227.789	-136.001	17.760
	500.00	111.612	180.255	138.408	-209.196	20.924	-299.324	-224.776	-113.391	11.846
	600.00	116.706	201.074	147.157	-197.770	32.350	-318.414	-221.319	-91.433	7.960
	700.00	120.873	219.386	156.194	-185.886	44.234	-339.456	-217.524	-70.081	5.230
	723.00	121.752	223.308	158.267	-183.095	47.025	-344.547	-216.610	-65.251	4.714

References

Phase	H / S	C _p	Remarks
SOL-A	Tk1/Be2	e	Tk1 TPT= 723./ SPT= 1000., L= 282.0 kJ

RuCl3[g]

RUTHENIUM TRICHLORIDE (GAS)

207.428

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	55.219	328.445	328.445	79.078	0.000	-18.848	79.078	89.443	-15.670
	300.00	55.283	328.786	328.446	79.180	0.102	-19.456	79.041	89.508	-15.585
	400.00	57.932	345.085	330.650	84.852	5.774	-53.182	77.092	93.291	-12.183
	500.00	59.759	358.217	334.892	90.740	11.662	-88.368	75.161	97.565	-10.193
	600.00	61.262	369.249	339.723	96.793	17.715	-124.756	73.245	102.226	-8.900
	700.00	62.612	378.795	344.638	102.988	23.910	-162.169	71.349	107.206	-8.000
	800.00	63.881	387.239	349.445	109.313	30.235	-200.478	69.480	112.456	-7.343
	900.00	65.102	394.834	354.073	115.763	36.685	-239.588	67.639	117.939	-6.845
	1000.00	66.294	401.755	358.501	122.333	43.255	-279.423	65.827	123.625	-6.458
	1100.00	67.467	408.129	362.726	129.021	49.943	-319.921	64.044	129.492	-6.149
	1200.00	68.626	414.049	366.759	135.826	56.748	-361.033	62.289	135.519	-5.899
	1300.00	69.777	419.588	370.612	142.746	63.668	-402.718	60.561	141.692	-5.693
	1400.00	70.920	424.800	374.299	149.781	70.703	-444.940	58.857	147.997	-5.522
	1500.00	72.059	429.732	377.831	156.930	77.852	-487.669	57.176	154.423	-5.377
	1600.00	73.194	434.419	381.223	164.192	85.114	-530.878	55.515	160.960	-5.255
	1700.00	74.326	438.890	384.484	171.568	92.490	-574.545	53.853	167.601	-5.150
	1800.00	75.456	443.171	387.627	179.057	99.979	-618.650	52.185	174.340	-5.059
	1900.00	76.584	447.281	390.659	186.659	107.581	-663.174	50.512	181.172	-4.981
	2000.00	77.710	451.238	393.590	194.374	115.296	-708.101	48.832	188.093	-4.912

References

Phase	H / S	C _p
GAS	Tk1/Be2,e	Be2,e

242.881

RUTHENIUM TETRACHLORIDE (GAS)

RuCl4[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	63.372	374.238	374.239	-79.914	0.000	-191.493	-79.914	-49.941	8.749
	300.00	63.456	374.631	374.240	-79.797	0.117	-192.186	-79.967	-49.755	8.663
	400.00	66.836	393.395	376.775	-73.266	6.648	-230.624	-82.791	-39.258	5.127
	500.00	69.021	408.556	381.663	-66.468	13.446	-270.746	-85.598	-28.049	2.930
	600.00	70.735	421.296	387.235	-59.477	20.437	-312.255	-88.394	-16.277	1.417
	700.00	72.227	432.314	392.906	-52.328	27.586	-354.948	-91.173	-4.037	0.301
	800.00	73.601	442.050	398.452	-45.036	34.878	-398.675	-93.928	8.599	-0.561
	900.00	74.906	450.794	403.790	-37.610	42.304	-443.325	-96.655	21.579	-1.252
	1000.00	76.168	458.752	408.894	-30.056	49.858	-488.808	-99.354	34.861	-1.821
	1100.00	77.402	466.070	413.764	-22.377	57.537	-535.054	-102.023	48.412	-2.299
	1200.00	78.617	472.857	418.409	-14.576	65.338	-582.004	-104.663	62.205	-2.708
	1300.00	79.819	479.197	422.844	-6.654	73.260	-629.611	-107.277	76.216	-3.062
	1400.00	81.011	485.156	427.084	1.387	81.301	-677.831	-109.864	90.429	-3.374
	1500.00	82.196	490.786	431.145	9.548	89.462	-726.631	-112.428	104.825	-3.650
	1600.00	83.376	496.128	435.041	17.827	97.741	-775.979	-114.971	119.391	-3.898
	1700.00	84.551	501.218	438.785	26.223	106.137	-825.848	-117.515	134.117	-4.121
	1800.00	85.723	506.084	442.389	34.737	114.651	-876.215	-120.063	148.992	-4.324
	1900.00	86.892	510.750	445.865	43.367	123.281	-927.058	-122.617	164.009	-4.509
	2000.00	88.059	515.237	449.223	52.115	132.029	-978.359	-125.176	179.161	-4.679

References

Phase	H / S	C _p
GAS	Tk1/Be2,e	Be2,e

196.062

RUTHENIUM PENTAFLUORIDE

RuF5

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	163.176	161.084	161.084	-892.907	0.000	-940.934	-892.907	-781.268	136.875
	300.00	163.176	162.093	161.087	-892.605	0.302	-941.233	-892.794	-780.576	135.910
	358.00	163.176	190.935	163.655	-883.141	9.766	-951.496	-889.339	-759.197	110.772
LIQ			222.056		79.496					
	358.00	182.004	412.991	163.655	-803.645	89.262	-951.496	-809.843	-759.197	110.772
	400.00	182.004	433.181	190.915	-796.001	96.906	-969.273	-806.644	-753.437	98.389
	500.00	182.004	473.794	243.580	-777.800	115.107	-1014.697	-799.315	-740.991	77.411
	600.00	182.004	506.977	284.799	-759.600	133.307	-1063.786	-792.314	-729.988	63.551

References

Phase	H / S	C _p	Remarks
SOL	Ku1	e	
LIQ	Tk1	e	Tk1 BPT= 500., L= 56.5 kJ

RuO2

RUTHENIUM DIOXIDE

133.069

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
SOL	298.15	56.483	58.158	58.158	-305.014	0.000	-322.354	-305.014	-252.681	44.269
	300.00	56.836	58.508	58.159	-304.909	0.105	-322.462	-305.008	-252.357	43.939
	400.00	69.644	76.855	60.573	-298.501	6.513	-329.243	-303.992	-234.927	30.678
	500.00	76.153	93.162	65.497	-291.181	13.833	-337.762	-302.194	-217.859	22.760
	600.00	80.183	107.427	71.322	-283.351	21.663	-347.807	-300.040	-201.190	17.515
	700.00	83.043	120.012	77.397	-275.183	29.831	-359.192	-297.701	-184.898	13.797
	800.00	85.278	131.252	83.439	-266.763	38.251	-371.765	-295.254	-168.950	11.031
	900.00	87.151	141.407	89.325	-258.139	46.875	-385.406	-292.738	-153.312	8.898
	1000.00	88.799	150.677	95.003	-249.340	55.674	-400.017	-290.171	-137.957	7.206
	1100.00	90.390	159.211	100.457	-240.384	64.630	-415.517	-287.565	-122.862	5.834
	1200.00	91.700	167.129	105.687	-231.284	73.730	-431.839	-284.927	-108.005	4.701

References

Phase	H / S	C _p
SOL	Nb1	F3,e

RuO3[g]

RUTHENIUM TRIOXIDE (GAS)

149.068

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
GAS	298.15	59.404	276.253	276.253	-78.241	0.000	-160.606	-78.241	-60.351	10.572
	300.00	59.655	276.622	276.255	-78.131	0.110	-161.117	-78.257	-60.240	10.489
	400.00	68.550	295.180	278.724	-71.659	6.582	-189.731	-78.662	-54.153	7.072
	500.00	72.802	310.982	283.639	-64.569	13.672	-220.060	-78.624	-48.026	5.017
	600.00	75.226	324.488	289.349	-57.158	21.083	-251.851	-78.468	-41.920	3.649
	700.00	76.788	336.209	295.225	-49.552	28.689	-284.899	-78.319	-35.841	2.675
	800.00	77.889	346.538	301.007	-41.815	36.426	-319.046	-78.225	-29.780	1.944
	900.00	78.723	355.763	306.587	-33.983	44.258	-354.170	-78.202	-23.727	1.377
	1000.00	79.391	364.093	311.928	-26.076	52.165	-390.169	-78.258	-17.672	0.923
	1100.00	79.951	371.686	317.020	-18.108	60.133	-426.964	-78.395	-11.607	0.551
	1200.00	80.437	378.664	321.871	-10.089	68.152	-464.486	-78.612	-5.527	0.241
	1300.00	80.871	385.120	326.491	-2.023	76.218	-502.679	-78.910	0.575	-0.023
	1400.00	81.267	391.128	330.896	6.084	84.325	-541.495	-79.290	6.703	-0.250
	1500.00	81.634	396.747	335.100	14.230	92.471	-580.892	-79.753	12.861	-0.448
	1600.00	81.981	402.027	339.120	22.410	100.651	-620.833	-80.303	19.053	-0.622
	1700.00	82.312	407.007	342.968	30.625	108.866	-661.287	-80.960	25.282	-0.777
	1800.00	82.629	411.721	346.658	38.872	117.113	-702.226	-81.728	31.553	-0.916
	1900.00	82.936	416.197	350.201	47.151	125.392	-743.623	-82.608	37.870	-1.041

References

Phase	H / S	C _p
GAS	Tk1	e

165.068		RUTHENIUM TETROXIDE (GAS)							RuO4[g]	
Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	75.814	290.772	290.772	-184.096	0.000	-270.790	-184.096	-139.953	24.519
	300.00	76.153	291.242	290.773	-183.955	0.141	-271.328	-184.109	-139.679	24.320
	400.00	88.174	315.037	293.936	-175.655	8.441	-301.670	-184.171	-124.832	16.301
	500.00	93.902	335.395	300.247	-166.522	17.574	-334.219	-183.619	-110.054	11.497
	600.00	97.152	352.828	307.593	-156.955	27.141	-368.652	-182.888	-95.408	8.306
	700.00	99.234	367.971	315.161	-147.129	36.967	-404.709	-182.145	-80.888	6.036
	800.00	100.692	381.322	322.613	-137.129	46.967	-442.186	-181.456	-66.470	4.340
	900.00	101.788	393.248	329.811	-127.003	57.093	-480.926	-180.842	-52.135	3.026
	1000.00	102.659	404.019	336.702	-116.779	67.317	-520.798	-180.312	-37.863	1.978
	1100.00	103.382	413.838	343.274	-106.476	77.620	-561.698	-179.868	-23.640	1.123
	1200.00	104.006	422.861	349.536	-96.106	87.990	-603.539	-179.510	-9.454	0.412
	1300.00	104.559	431.208	355.501	-85.677	98.419	-646.247	-179.236	4.705	-0.189
	1400.00	105.061	438.975	361.189	-75.196	108.900	-689.761	-179.049	18.847	-0.703
	1500.00	105.525	446.240	366.620	-64.666	119.430	-734.026	-178.948	32.979	-1.148
	1600.00	105.960	453.064	371.811	-54.092	130.004	-778.994	-178.938	47.106	-1.538
	1700.00	106.373	459.500	376.782	-43.475	140.621	-824.625	-179.039	61.236	-1.882
	1800.00	106.768	465.592	381.548	-32.818	151.278	-870.883	-179.255	75.376	-2.187
	1900.00	107.150	471.375	386.125	-22.122	161.974	-917.733	-179.587	89.531	-2.461
	2000.00	107.520	476.880	390.526	-11.388	172.708	-965.148	-180.035	103.706	-2.709

References

Phase	H / S	C _p
GAS	Tk1	Tk1,e

165.202		RUTHENIUM DISULFIDE							RuS2	
Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	62.180	54.392	54.392	-205.853	0.000	-222.070	-205.853	-194.447	34.066
	300.00	62.323	54.777	54.393	-205.738	0.115	-222.171	-205.867	-194.376	33.844
	400.00	67.779	73.542	56.915	-199.202	6.651	-228.619	-210.914	-190.271	24.847
	500.00	70.940	89.030	61.835	-192.255	13.598	-236.770	-214.235	-184.767	19.302
	600.00	73.198	102.172	67.490	-185.044	20.809	-246.347	-216.691	-178.623	15.551
	700.00	75.029	113.597	73.278	-177.630	28.223	-257.148	-218.471	-172.134	12.845
	800.00	76.634	123.723	78.963	-170.045	35.808	-269.023	-220.243	-165.396	10.799
	900.00	78.106	132.835	84.451	-162.307	43.546	-281.859	-327.620	-156.125	9.061
	1000.00	79.496	141.137	89.710	-154.427	51.426	-295.563	-326.180	-137.147	7.164
	1100.00	80.833	148.776	94.737	-146.410	59.443	-310.064	-324.688	-118.315	5.618
	1200.00	82.133	155.866	99.539	-138.261	67.592	-325.300	-323.150	-99.622	4.336
	1300.00	83.407	162.490	104.130	-129.984	75.869	-341.222	-321.570	-81.058	3.257
	1400.00	84.663	168.717	108.523	-121.581	84.272	-357.785	-319.952	-62.618	2.336
	1500.00	85.904	174.601	112.734	-113.052	92.801	-374.954	-318.298	-44.294	1.542

References

Phase	H / S	C _p
SOL	Mi1	Mi1

RuSe2

RUTHENIUM DISELENIDE

258.990

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	72.237	81.588	81.588	-161.502	0.000	-185.827	-161.502	-152.121	26.651
	300.00	72.316	82.035	81.589	-161.368	0.134	-185.979	-161.507	-152.063	26.476
	400.00	75.458	103.311	84.469	-153.965	7.537	-195.290	-161.859	-148.868	19.440
	500.00	77.509	120.381	90.000	-146.311	15.191	-206.502	-174.290	-145.386	15.188
	600.00	79.129	134.660	96.286	-138.477	23.025	-219.273	-176.001	-139.442	12.140
	700.00	80.546	146.966	102.667	-130.492	31.010	-233.369	-177.620	-133.220	9.941
	800.00	81.855	157.808	108.895	-122.372	39.130	-248.618	-179.165	-126.771	8.277
	900.00	83.101	167.522	114.879	-114.123	47.379	-264.893	-180.648	-120.132	6.972
	1000.00	84.308	176.340	120.591	-105.753	55.749	-282.093	-182.076	-113.331	5.920
	1100.00	85.489	184.431	126.031	-97.263	64.239	-300.137	-290.079	-96.481	4.582
	1200.00	86.653	191.919	131.214	-88.656	72.846	-318.959	-288.521	-78.950	3.437
	1300.00	87.805	198.901	136.155	-79.933	81.569	-338.504	-286.899	-61.551	2.473
	1400.00	88.948	205.450	140.873	-71.095	90.407	-358.724	-285.216	-44.279	1.652
	1500.00	90.084	211.625	145.386	-62.143	99.359	-379.581	-283.475	-27.129	0.945

References

Phase	H / S	C _p
SOL	Mi1	Mi1

Ru3U

3-RUTHENIUM URANIUM

541.239

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	99.797	108.366	108.366	-217.568	0.000	-249.877	-217.568	-209.360	36.679
	300.00	99.901	108.983	108.368	-217.383	0.185	-250.078	-217.568	-209.309	36.444
	400.00	104.428	138.385	112.346	-207.152	10.416	-262.506	-217.467	-206.567	26.975
	500.00	107.864	162.068	119.997	-196.532	21.036	-277.567	-217.319	-203.860	21.297
	600.00	110.869	182.004	128.713	-185.594	31.974	-294.796	-217.263	-201.176	17.514
	700.00	113.671	199.307	137.589	-174.365	43.203	-313.880	-217.393	-198.487	14.811
	800.00	116.364	214.662	146.281	-162.863	54.705	-334.592	-217.786	-195.763	12.782
	900.00	118.995	228.520	154.661	-151.095	66.473	-356.763	-218.513	-192.971	11.200
	1000.00	121.587	241.192	162.689	-139.065	78.503	-380.257	-222.046	-189.912	9.920
	1100.00	124.153	252.901	170.365	-126.778	90.790	-404.969	-227.089	-186.443	8.853
	1200.00	126.702	263.813	177.702	-114.235	103.333	-430.811	-227.115	-182.746	7.955
	1300.00	129.239	274.055	184.724	-101.438	116.130	-457.709	-227.114	-179.049	7.194
	1400.00	131.767	283.725	191.453	-88.388	129.180	-485.603	-227.093	-175.352	6.542
	1500.00	134.288	292.902	197.913	-75.085	142.483	-514.438	-236.493	-171.051	5.957
	1600.00	136.804	301.649	204.125	-61.530	156.038	-544.169	-237.418	-166.658	5.441
	1700.00	139.316	310.018	210.110	-47.724	169.844	-574.755	-238.404	-162.206	4.984
	1800.00	141.826	318.052	215.885	-33.667	183.901	-606.161	-239.462	-157.693	4.576

References

Phase	H / S	C _p
SOL	H6,Ku1	e

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
S.-RH	298.15	22.761	32.056	32.056	0.000	0.000	-9.557	0.000	0.000	0.000
	300.00	22.796	32.197	32.056	0.042	0.042	-9.617	0.000	0.000	0.000
	368.30	24.167	37.006	32.539	1.645	1.645	-11.984	0.000	0.000	0.000
			1.089		0.401					
S.-MO	368.30	24.694	38.094	32.539	2.046	2.046	-11.984	0.000	0.000	0.000
	388.36	25.319	39.414	32.860	2.545	2.545	-12.762	0.000	0.000	0.000
			4.431		1.721					
LIQ	388.36	32.325	43.846	32.860	4.266	4.266	-12.762	0.000	0.000	0.000
	400.00	29.666	44.752	33.193	4.623	4.623	-13.277	0.000	0.000	0.000
	500.00	38.779	53.413	36.362	8.526	8.526	-18.181	0.000	0.000	0.000
	600.00	33.724	59.947	39.778	12.101	12.101	-23.867	0.000	0.000	0.000
	700.00	32.971	65.050	43.034	15.411	15.411	-30.124	0.000	0.000	0.000
	800.00	34.509	69.534	46.071	18.771	18.771	-36.856	0.000	0.000	0.000
	882.12	36.795	73.010	48.418	21.694	21.694	-42.710	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
S.-RH	Ja2	Mi1	
S.-MO	Ja2	Mi1	
LIQ	Ja2	Mi1	Ja2 BPT=882.117(S2),L=53.326/NBPT=717.824(S6+S7+S8...),L=9.62

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	23.578	167.828	167.828	276.980	0.000	226.942	276.980	236.500	-41.434
	300.00	23.556	167.974	167.828	277.024	0.044	226.631	276.981	236.248	-41.135
	400.00	22.782	174.629	168.741	279.335	2.355	209.484	274.712	222.761	-29.090
	500.00	22.401	179.668	170.443	281.593	4.613	191.759	273.067	209.940	-21.932
	600.00	22.175	183.731	172.330	283.821	6.841	173.582	271.719	197.449	-17.189
	700.00	22.022	187.137	174.208	286.030	9.050	155.034	270.619	185.158	-13.817
	800.00	21.908	190.070	176.012	288.226	11.246	136.171	269.455	173.027	-11.298
	900.00	21.817	192.645	177.720	290.412	13.432	117.032	215.435	162.200	-9.414
	1000.00	21.740	194.939	179.329	292.590	15.610	97.651	215.778	156.267	-8.163
	1100.00	21.672	197.008	180.844	294.761	17.781	78.052	216.106	150.300	-7.137
	1200.00	21.610	198.891	182.270	296.925	19.945	58.256	216.422	144.303	-6.281
	1300.00	21.553	200.619	183.616	299.083	22.103	38.279	216.726	138.281	-5.556
	1400.00	21.499	202.214	184.888	301.236	24.256	18.136	217.019	132.236	-4.934
	1500.00	21.447	203.695	186.093	303.383	26.403	-2.160	217.303	126.170	-4.394
	1600.00	21.397	205.078	187.237	305.525	28.545	-22.600	217.577	120.086	-3.920
	1700.00	21.349	206.374	188.325	307.662	30.682	-43.173	217.841	113.984	-3.502
	1800.00	21.301	207.592	189.362	309.795	32.815	-63.872	218.097	107.868	-3.130
	1900.00	21.255	208.743	190.352	311.923	34.943	-84.689	218.344	101.737	-2.797
	2000.00	21.209	209.832	191.299	314.046	37.066	-105.618	218.583	95.593	-2.497
	2100.00	21.163	210.866	192.206	316.164	39.184	-126.654	218.813	89.438	-2.225
	2200.00	21.118	211.849	193.077	318.278	41.298	-147.790	219.035	83.272	-1.977
	2300.00	21.074	212.787	193.914	320.388	43.408	-169.022	219.249	77.096	-1.751
	2400.00	21.030	213.683	194.719	322.493	45.513	-190.346	219.455	70.911	-1.543
	2500.00	21.839	214.574	195.496	324.675	47.695	-211.759	219.734	64.716	-1.352
	2600.00	21.878	215.431	196.246	326.861	49.881	-233.259	220.013	58.510	-1.175
	2700.00	21.917	216.257	196.972	329.051	52.071	-254.844	220.292	52.293	-1.012
	2800.00	21.956	217.055	197.675	331.244	54.264	-276.510	220.572	46.066	-0.859
	2900.00	21.996	217.826	198.357	333.442	56.462	-298.254	220.852	39.829	-0.717
	3000.00	22.036	218.573	199.018	335.644	58.664	-320.074	221.133	33.582	-0.585

References

Phase	H / S	C _p
GAS	Ja2	Mi1

64.132

SULFUR (GAS)

S2[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
GAS	298.15	32.448	228.165	228.165	128.600	0.000	60.573	128.600	79.688	-13.961
	300.00	32.501	228.366	228.166	128.660	0.060	60.150	128.576	79.384	-13.822
	400.00	34.399	238.014	229.468	132.018	3.418	36.813	122.771	63.368	-8.275
	500.00	35.313	245.798	231.981	135.508	6.908	12.609	118.457	48.972	-5.116
	600.00	35.840	252.287	234.840	139.068	10.468	-12.304	114.865	35.429	-3.084
	700.00	36.185	257.839	237.738	142.671	14.071	-37.817	111.848	22.431	-1.674
	800.00	36.432	262.688	240.560	146.302	17.702	-63.848	108.760	9.865	-0.644
	900.00	36.622	266.990	243.263	149.955	21.355	-90.336	0.000	0.000	0.000
	1000.00	36.777	270.857	245.832	153.625	25.025	-117.232	0.000	0.000	0.000
	1100.00	36.910	274.369	248.269	157.310	28.710	-144.496	0.000	0.000	0.000
	1200.00	37.026	277.585	250.580	161.007	32.407	-172.096	0.000	0.000	0.000
	1300.00	37.132	280.553	252.773	164.715	36.115	-200.005	0.000	0.000	0.000
	1400.00	37.230	283.309	254.857	168.433	39.833	-228.199	0.000	0.000	0.000
	1500.00	37.321	285.880	256.840	172.160	43.560	-256.660	0.000	0.000	0.000
	1600.00	37.408	288.292	258.731	175.897	47.297	-285.370	0.000	0.000	0.000
	1700.00	37.492	290.562	260.538	179.642	51.042	-314.314	0.000	0.000	0.000
	1800.00	37.573	292.708	262.266	183.395	54.795	-343.478	0.000	0.000	0.000
	1900.00	37.652	294.741	263.922	187.156	58.556	-372.852	0.000	0.000	0.000
	2000.00	37.729	296.674	265.512	190.926	62.326	-402.423	0.000	0.000	0.000
	2100.00	37.805	298.517	267.040	194.702	66.102	-432.184	0.000	0.000	0.000
	2200.00	37.879	300.277	268.511	198.486	69.886	-462.124	0.000	0.000	0.000
	2300.00	37.953	301.963	269.929	202.278	73.678	-492.237	0.000	0.000	0.000
	2400.00	38.026	303.580	271.298	206.077	77.477	-522.514	0.000	0.000	0.000
	2500.00	38.098	305.133	272.620	209.883	81.283	-552.950	0.000	0.000	0.000
	2600.00	38.169	306.629	273.900	213.697	85.097	-583.539	0.000	0.000	0.000
	2700.00	38.240	308.071	275.139	217.517	88.917	-614.275	0.000	0.000	0.000
	2800.00	38.311	309.463	276.340	221.345	92.745	-645.152	0.000	0.000	0.000
	2900.00	38.381	310.809	277.505	225.179	96.579	-676.166	0.000	0.000	0.000
	3000.00	38.451	312.111	278.637	229.021	100.421	-707.312	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Ja2	Mi1

S3[g]

SULFUR (GAS)

96.198

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	50.575	269.500	269.500	141.500	0.000	61.149	141.500	89.821	-15.736
	300.00	50.663	269.813	269.501	141.594	0.094	60.650	141.467	89.501	-15.583
	400.00	53.770	284.877	271.534	146.837	5.337	32.887	132.967	72.719	-9.496
	500.00	55.226	297.049	275.459	152.295	10.795	3.770	126.718	58.313	-6.092
	600.00	56.031	307.196	279.927	157.861	16.361	-26.456	121.557	45.144	-3.930
	700.00	56.529	315.873	284.457	163.491	21.991	-57.620	117.258	32.752	-2.444
	800.00	56.863	323.445	288.868	169.162	27.662	-89.594	112.849	20.975	-1.370
	900.00	57.102	330.157	293.089	174.861	33.361	-122.281	-50.072	13.224	-0.767
	1000.00	57.283	336.183	297.103	180.580	39.080	-155.603	-49.857	20.245	-1.058
	1100.00	57.424	341.649	300.908	186.316	44.816	-189.498	-49.649	27.245	-1.294
	1200.00	57.540	346.651	304.514	192.064	50.564	-223.917	-49.446	34.227	-1.490
	1300.00	57.637	351.261	307.935	197.823	56.323	-258.816	-49.249	41.191	-1.655
	1400.00	57.720	355.535	311.184	203.591	62.091	-294.158	-49.058	48.141	-1.796
	1500.00	57.793	359.520	314.275	209.367	67.867	-329.913	-48.874	55.077	-1.918
	1600.00	57.859	363.252	317.221	215.150	73.650	-366.054	-48.696	62.002	-2.024
	1700.00	57.919	366.761	320.033	220.939	79.439	-402.556	-48.524	68.915	-2.117
	1800.00	57.975	370.074	322.722	226.733	85.233	-439.399	-48.359	75.818	-2.200
	1900.00	58.027	373.210	325.297	232.533	91.033	-476.565	-48.201	82.713	-2.274
	2000.00	58.076	376.187	327.768	238.339	96.839	-514.036	-48.050	89.599	-2.340

References

Phase	H / S	C _p
GAS	Ja2	Mi1

128.264

SULFUR (GAS)

S4[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	74.649	310.600	310.600	145.800	0.000	53.195	145.800	91.425	-16.017
	300.00	74.748	311.062	310.601	145.938	0.138	52.620	145.770	91.087	-15.860
	400.00	78.232	333.114	313.584	153.612	7.812	20.366	135.118	73.476	-9.595
	500.00	79.862	350.766	319.315	161.525	15.725	-13.858	127.423	58.867	-6.150
	600.00	80.762	365.413	325.812	169.561	23.761	-49.687	121.155	45.779	-3.985
	700.00	81.317	377.908	332.384	177.667	31.867	-86.869	116.022	33.627	-2.509
	800.00	81.688	388.792	338.769	185.818	40.018	-125.215	110.734	22.210	-1.450
	900.00	81.952	398.429	344.873	194.001	48.201	-164.586	-105.909	16.087	-0.934
	1000.00	82.150	407.074	350.668	202.206	56.406	-204.868	-105.044	29.596	-1.546
	1100.00	82.305	414.912	356.158	210.429	64.629	-245.974	-104.190	43.018	-2.043
	1200.00	82.430	422.079	361.357	218.666	72.866	-287.828	-103.347	56.363	-2.453
	1300.00	82.535	428.681	366.285	226.915	81.115	-330.371	-102.515	69.639	-2.798
	1400.00	82.624	434.801	370.963	235.173	89.373	-373.548	-101.693	82.850	-3.091
	1500.00	82.702	440.504	375.411	243.439	97.639	-417.317	-100.882	96.004	-3.343
	1600.00	82.772	445.844	379.648	251.713	105.913	-461.637	-100.081	109.103	-3.562
	1700.00	82.835	450.864	383.691	259.993	114.193	-506.475	-99.290	122.153	-3.753
	1800.00	82.893	455.600	387.556	268.280	122.480	-551.800	-98.511	135.157	-3.922
	1900.00	82.947	460.083	391.256	276.572	130.772	-597.586	-97.741	148.117	-4.072
	2000.00	82.998	464.339	394.805	284.869	139.069	-643.809	-96.982	161.037	-4.206

References

Phase	H / S	C _p
GAS	Ja2	Mi1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [—]
GAS	298.15	88.234	308.600	308.600	109.400	0.000	17.391	109.400	65.178	-11.419
	300.00	88.463	309.147	308.602	109.563	0.163	16.819	109.353	64.904	-11.301
	400.00	96.543	335.867	312.190	118.871	9.471	-15.476	95.754	50.911	-6.648
	500.00	100.329	357.863	319.193	128.735	19.335	-50.196	86.107	40.709	-4.253
	600.00	102.424	376.357	327.220	138.882	29.482	-86.932	78.374	32.401	-2.821
	700.00	103.721	392.250	335.402	149.194	39.794	-125.381	72.138	25.239	-1.883
	800.00	104.592	406.160	343.395	159.612	50.212	-165.316	65.757	18.966	-1.238
	900.00	105.217	418.517	351.068	170.104	60.704	-206.562	-204.783	19.279	-1.119
	1000.00	105.687	429.628	358.378	180.650	71.250	-248.978	-203.413	44.102	-2.304
	1100.00	106.058	439.720	365.321	191.238	81.838	-292.453	-202.036	68.786	-3.266
	1200.00	106.360	448.961	371.912	201.859	92.459	-336.894	-200.657	93.346	-4.063
	1300.00	106.614	457.485	378.171	212.508	103.108	-382.222	-199.278	117.790	-4.733
	1400.00	106.833	465.394	384.122	223.181	113.781	-428.370	-197.901	142.128	-5.303
	1500.00	107.026	472.771	389.789	233.874	124.474	-475.283	-196.527	166.368	-5.793
	1600.00	107.199	479.684	395.193	244.586	135.186	-522.909	-195.156	190.516	-6.220
	1700.00	107.358	486.188	400.356	255.314	145.914	-571.206	-193.791	214.579	-6.593
	1800.00	107.504	492.329	405.297	266.057	156.657	-620.135	-192.431	238.561	-6.923
	1900.00	107.641	498.145	410.032	276.814	167.414	-669.661	-191.077	262.469	-7.216
	2000.00	107.770	503.669	414.577	287.585	178.185	-719.754	-189.729	286.304	-7.478

References

Phase	H / S	C _p
GAS	Ja2	Mi1

192.396

SULFUR (GAS)

S6[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _i [— —]
GAS	298.15	112.614	354.100	354.100	101.900	0.000	-3.675	101.900	53.670	-9.403
	300.00	112.853	354.797	354.102	102.109	0.209	-4.331	101.856	53.371	-9.293
	400.00	121.278	388.589	358.652	113.875	11.975	-41.561	86.134	38.103	-4.976
	500.00	125.213	416.122	367.481	126.221	24.321	-81.840	75.067	27.246	-2.846
	600.00	127.381	439.160	377.560	138.860	36.960	-124.636	66.251	18.564	-1.616
	700.00	128.715	458.904	387.804	151.670	49.770	-169.563	59.203	11.181	-0.834
	800.00	129.605	476.153	397.793	164.589	62.689	-216.334	51.963	4.805	-0.314
	900.00	130.236	491.457	407.366	177.582	75.682	-264.729	-272.283	6.280	-0.364
	1000.00	130.706	505.204	416.474	190.630	88.730	-314.574	-270.245	37.122	-1.939
	1100.00	131.072	517.679	425.116	203.720	101.820	-365.727	-268.209	67.760	-3.218
	1200.00	131.366	529.097	433.312	216.842	114.942	-418.074	-266.177	98.213	-4.275
	1300.00	131.609	539.622	441.090	229.991	128.091	-471.517	-264.152	128.497	-5.163
	1400.00	131.817	549.383	448.481	243.163	141.263	-525.973	-262.135	158.625	-5.918
	1500.00	131.997	558.484	455.515	256.354	154.454	-581.372	-260.127	188.609	-6.568
	1600.00	132.156	567.008	462.219	269.562	167.662	-637.651	-258.129	218.460	-7.132
	1700.00	132.300	575.024	468.621	282.785	180.885	-694.756	-256.141	248.185	-7.626
	1800.00	132.432	582.590	474.745	296.021	194.121	-752.641	-254.164	277.795	-8.061
	1900.00	132.553	589.753	480.611	309.271	207.371	-811.261	-252.199	307.294	-8.448
	2000.00	132.667	596.555	486.240	322.532	220.632	-870.579	-250.245	336.691	-8.793

References

Phase	H / S	C _p
GAS	Ja2	Mi1

S7[g]

SULFUR (GAS)

224.462

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
GAS	298.15	129.980	407.700	407.700	113.700	0.000	-7.856	113.700	59.047	-10.345
	300.00	130.304	408.505	407.702	113.941	0.241	-8.611	113.646	58.708	-10.222
	400.00	141.759	447.794	412.981	127.625	13.925	-51.493	95.261	41.449	-5.413
	500.00	147.119	480.067	423.271	142.098	28.398	-97.936	82.419	29.332	-3.064
	600.00	150.081	507.176	435.057	156.971	43.271	-147.334	72.261	19.732	-1.718
	700.00	151.910	530.458	447.063	172.077	58.377	-199.244	64.199	11.624	-0.867
	800.00	153.135	550.828	458.787	187.333	73.633	-253.329	55.936	4.666	-0.305
	900.00	154.010	568.918	470.037	202.693	88.993	-309.334	-322.150	6.843	-0.397
	1000.00	154.667	585.180	480.752	218.128	104.428	-367.052	-319.560	43.260	-2.260
	1100.00	155.181	599.946	490.927	233.621	119.921	-426.320	-316.963	79.416	-3.771
	1200.00	155.598	613.467	500.583	249.161	135.461	-487.000	-314.362	115.335	-5.020
	1300.00	155.947	625.936	509.753	264.739	151.039	-548.978	-311.762	151.038	-6.069
	1400.00	156.246	637.504	518.469	280.349	166.649	-612.157	-309.166	186.541	-6.960
	1500.00	156.509	648.293	526.769	295.987	182.287	-676.453	-306.574	221.858	-7.726
	1600.00	156.744	658.402	534.683	311.650	197.950	-741.793	-303.989	257.002	-8.390
	1700.00	156.957	667.911	542.243	327.335	213.635	-808.114	-301.412	291.985	-8.972
	1800.00	157.154	676.888	549.476	343.040	229.340	-875.358	-298.843	326.817	-9.484
	1900.00	157.337	685.390	556.408	358.765	245.065	-943.475	-296.283	361.506	-9.938
	2000.00	157.509	693.464	563.061	374.507	260.807	-1012.421	-293.732	396.060	-10.344

References

Phase	H / S	C _p
GAS	Ja2	Mi1

256.528

SULFUR (GAS)

S8[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	155.818	430.310	430.310	100.420	0.000	-27.877	100.420	48.583	-8.512
	300.00	156.135	431.275	430.313	100.709	0.289	-28.674	100.371	48.262	-8.403
	400.00	167.304	477.950	436.601	116.960	16.540	-74.220	79.973	31.999	-4.179
	500.00	172.523	515.907	448.788	133.980	33.560	-123.974	65.775	21.475	-2.243
	600.00	175.401	547.639	462.692	151.388	50.968	-177.195	54.576	13.738	-1.196
	700.00	177.173	574.821	476.816	169.024	68.604	-233.351	45.735	7.641	-0.570
	800.00	178.355	598.561	490.581	186.804	86.384	-292.045	36.636	2.807	-0.183
	900.00	179.195	619.619	503.771	204.683	104.263	-352.974	-395.137	8.371	-0.486
	1000.00	179.822	638.533	516.318	222.635	122.215	-415.898	-391.865	53.030	-2.770
	1100.00	180.310	655.696	528.220	240.643	140.223	-480.622	-388.596	97.361	-4.623
	1200.00	180.703	671.402	539.507	258.694	158.274	-546.988	-385.332	141.395	-6.155
	1300.00	181.029	685.879	550.217	276.781	176.361	-614.862	-382.077	185.157	-7.440
	1400.00	181.308	699.305	560.392	294.898	194.478	-684.129	-378.832	228.669	-8.532
	1500.00	181.550	711.823	570.075	313.042	212.622	-754.692	-375.600	271.949	-9.470
	1600.00	181.765	723.547	579.304	331.208	230.788	-826.467	-372.380	315.014	-10.284
	1700.00	181.959	734.572	588.117	349.394	248.974	-899.379	-369.174	357.877	-10.996
	1800.00	182.137	744.978	596.545	367.599	267.179	-973.361	-365.982	400.553	-11.624
	1900.00	182.301	754.830	604.619	385.821	285.401	-1048.356	-362.805	443.051	-12.180
	2000.00	182.455	764.184	612.365	404.059	303.639	-1124.310	-359.643	485.383	-12.677

References

Phase	H / S	C _p
GAS	Ja2	Mi1

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	52.897	301.650	301.650	-12.552	0.000	-102.489	-12.552	-47.550	8.331
	300.00	52.959	301.978	301.651	-12.454	0.098	-103.047	-12.636	-47.767	8.317
	400.00	55.150	317.558	303.761	-7.033	5.519	-134.056	-46.279	-52.962	6.916
	500.00	56.174	329.987	307.805	-1.461	11.091	-166.455	-48.301	-54.421	5.685
	600.00	56.738	340.283	312.385	4.187	16.739	-199.983	-49.947	-55.481	4.830
	700.00	57.085	349.057	317.013	9.879	22.431	-234.461	-51.300	-56.295	4.201
	800.00	57.316	356.696	321.506	15.600	28.152	-269.757	-52.687	-56.916	3.716
	900.00	57.479	363.457	325.799	21.340	33.892	-305.771	-106.910	-56.205	3.262
	1000.00	57.602	369.519	329.873	27.094	39.646	-342.425	-106.757	-50.580	2.642
	1100.00	57.696	375.014	333.731	32.860	45.412	-379.656	-106.607	-44.969	2.135
	1200.00	57.773	380.037	337.383	38.633	51.185	-417.412	-106.461	-39.372	1.714
	1300.00	57.836	384.664	340.845	44.414	56.966	-455.650	-106.320	-33.787	1.358
	1400.00	57.889	388.952	344.130	50.200	62.752	-494.334	-106.185	-28.213	1.053
	1500.00	57.936	392.948	347.253	55.991	68.543	-533.431	-106.054	-22.648	0.789
	1600.00	57.977	396.688	350.227	61.787	74.339	-572.915	-105.929	-17.092	0.558
	1700.00	58.014	400.204	353.064	67.586	80.138	-612.761	-105.810	-11.543	0.355
	1800.00	58.048	403.521	355.776	73.390	85.942	-652.949	-105.696	-6.002	0.174
	1900.00	58.079	406.661	358.372	79.196	91.748	-693.459	-105.589	-0.466	0.013
	2000.00	58.109	409.641	360.862	85.005	97.557	-734.276	-105.487	5.064	-0.132

References

Phase	H / S	C _p
GAS	Mi1	Mi1

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	75.251	350.519	350.519	30.962	0.000	-73.545	30.962	-9.049	1.585
	300.00	75.341	350.985	350.521	31.101	0.139	-74.194	30.877	-9.297	1.619
	400.00	78.599	373.167	353.523	38.820	7.858	-110.447	-5.049	-16.076	2.099
	500.00	80.253	390.901	359.285	46.770	15.808	-148.681	-8.595	-18.466	1.929
	600.00	81.275	405.629	365.816	54.850	23.888	-188.528	-11.386	-20.159	1.755
	700.00	81.998	418.215	372.425	63.015	32.053	-229.735	-13.575	-21.446	1.600
	800.00	82.563	429.202	378.850	71.244	40.282	-272.118	-15.813	-22.421	1.464
	900.00	83.035	438.955	384.996	79.525	48.563	-315.535	-123.703	-20.801	1.207
	1000.00	83.450	447.725	390.838	87.849	56.887	-359.876	-122.814	-9.415	0.492
	1100.00	83.828	455.697	396.378	96.214	65.252	-405.053	-121.908	1.881	-0.089
	1200.00	84.180	463.006	401.630	104.614	73.652	-450.993	-120.984	13.094	-0.570
	1300.00	84.513	469.758	406.614	113.049	82.087	-497.636	-120.042	24.229	-0.974
	1400.00	84.834	476.032	411.351	121.516	90.554	-544.929	-119.085	35.291	-1.317
	1500.00	85.145	481.896	415.860	130.015	99.053	-592.829	-118.110	46.284	-1.612
	1600.00	85.449	487.401	420.161	138.545	107.583	-641.296	-117.119	57.211	-1.868
	1700.00	85.747	492.590	424.271	147.105	116.143	-690.298	-116.112	68.076	-2.092
	1800.00	86.041	497.500	428.204	155.694	124.732	-739.805	-115.089	78.881	-2.289
	1900.00	86.331	502.160	431.975	164.313	133.351	-789.790	-114.050	89.629	-2.464
	2000.00	86.618	506.595	435.596	172.961	141.999	-840.230	-112.995	100.322	-2.620

References

Phase	H / S	C _p	Remarks
GAS	Mi1	Mi1	Mi1 MPT= 227., BPT= 360.

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	37.540	237.342	237.342	156.482	0.000	85.718	156.482	128.537	-22.519
	300.00	37.550	237.574	237.343	156.551	0.069	85.279	156.478	128.364	-22.350
	400.00	37.904	248.433	238.821	160.327	3.845	60.954	153.939	119.124	-15.556
	500.00	38.053	256.910	241.622	164.126	7.644	35.671	152.050	110.616	-11.556
	600.00	38.120	263.854	244.766	167.935	11.453	9.622	150.465	102.486	-8.922
	700.00	38.150	269.733	247.924	171.749	15.267	-17.065	149.131	94.596	-7.059
	800.00	38.159	274.828	250.975	175.564	19.082	-44.298	147.734	86.898	-5.674
	900.00	38.156	279.322	253.880	179.380	22.898	-72.010	93.481	80.535	-4.674
	1000.00	38.146	283.342	256.629	183.195	26.713	-100.147	93.590	79.090	-4.131
	1100.00	38.132	286.977	259.225	187.009	30.527	-128.666	93.685	77.636	-3.687
	1200.00	38.113	290.294	261.678	190.821	34.339	-157.532	93.767	76.173	-3.316
	1300.00	38.093	293.344	263.998	194.632	38.150	-186.716	93.837	74.704	-3.002
	1400.00	38.071	296.166	266.196	198.440	41.958	-216.193	93.895	73.230	-2.732
	1500.00	38.048	298.792	268.283	202.246	45.764	-245.942	93.943	71.752	-2.499
	1600.00	38.024	301.247	270.267	206.049	49.567	-275.946	93.980	70.271	-2.294
	1700.00	37.999	303.551	272.158	209.851	53.369	-306.187	94.007	68.788	-2.114
	1800.00	37.973	305.723	273.963	213.649	57.167	-336.652	94.024	67.304	-1.953
	1900.00	37.947	307.775	275.689	217.445	60.963	-367.327	94.031	65.820	-1.810
	2000.00	37.921	309.721	277.343	221.239	64.757	-398.203	94.027	64.335	-1.680

References

Phase	H / S	C _p
GAS	Ja1	Ja1

102.971

SULFUR DICHLORIDE (GAS)

SCI2[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
GAS	298.15	50.892	281.651	281.651	-17.573	0.000	-101.547	-17.573	-25.467	4.462
	300.00	50.961	281.966	281.652	-17.479	0.094	-102.069	-17.584	-25.516	4.443
	400.00	53.650	297.036	283.688	-12.234	5.339	-131.048	-20.387	-27.984	3.654
	500.00	55.116	309.180	287.612	-6.789	10.784	-161.379	-22.415	-29.670	3.100
	600.00	55.986	319.312	292.074	-1.230	16.343	-192.818	-24.068	-30.957	2.695
	700.00	56.541	327.987	296.600	4.398	21.971	-225.193	-25.426	-31.997	2.388
	800.00	56.914	335.563	301.007	10.072	27.645	-258.379	-26.817	-32.842	2.144
	900.00	57.177	342.283	305.227	15.777	33.350	-292.277	-81.044	-32.356	1.878
	1000.00	57.368	348.317	309.239	21.505	39.078	-326.812	-80.893	-26.954	1.408
	1100.00	57.511	353.792	313.045	27.249	44.822	-361.922	-80.744	-21.567	1.024
	1200.00	57.620	358.801	316.652	33.006	50.579	-397.555	-80.600	-16.194	0.705
	1300.00	57.706	363.417	320.074	38.772	56.345	-433.669	-80.460	-10.833	0.435
	1400.00	57.773	367.696	323.325	44.547	62.120	-470.227	-80.327	-5.482	0.205
	1500.00	57.828	371.684	326.417	50.327	67.900	-507.199	-80.199	-0.140	0.005
	1600.00	57.872	375.417	329.364	56.112	73.685	-544.556	-80.078	5.193	-0.170
	1700.00	57.908	378.927	332.177	61.901	79.474	-582.275	-79.965	10.519	-0.323
	1800.00	57.938	382.238	334.867	67.693	85.266	-620.334	-79.859	15.839	-0.460
	1900.00	57.963	385.371	337.444	73.488	91.061	-658.716	-79.762	21.152	-0.582
	2000.00	57.984	388.345	339.915	79.286	96.859	-697.403	-79.674	26.461	-0.691

References

Phase	H / S	C _p
GAS	Ja1	Ja1

S2Cl[g]

DISULFUR CHLORIDE RADICAL (GAS)

99.585

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	50.954	291.686	291.686	78.559	0.000	-8.407	78.559	43.969	-7.703
	300.00	51.034	292.001	291.687	78.653	0.094	-8.947	78.538	43.754	-7.618
	400.00	53.873	307.129	293.730	83.919	5.360	-38.933	72.907	32.515	-4.246
	500.00	55.219	319.311	297.668	89.380	10.821	-70.275	68.779	22.851	-2.387
	600.00	55.978	329.451	302.144	94.943	16.384	-102.728	65.372	14.003	-1.219
	700.00	56.459	338.119	306.679	100.567	22.008	-136.117	62.538	5.668	-0.423
	800.00	56.793	345.681	311.092	106.230	27.671	-170.315	59.629	-2.262	0.148
	900.00	57.040	352.385	315.315	111.922	33.363	-205.224	-48.955	-7.511	0.436
	1000.00	57.235	358.405	319.328	117.636	39.077	-240.769	-48.781	-2.916	0.152
	1100.00	57.394	363.868	323.133	123.368	44.809	-276.887	-48.611	1.662	-0.079
	1200.00	57.530	368.868	326.738	129.114	50.555	-313.527	-48.443	6.225	-0.271
	1300.00	57.649	373.478	330.159	134.874	56.315	-350.647	-48.279	10.774	-0.433
	1400.00	57.756	377.754	333.408	140.644	62.085	-388.212	-48.117	15.311	-0.571
	1500.00	57.853	381.742	336.498	146.424	67.865	-426.189	-47.959	19.836	-0.691
	1600.00	57.944	385.479	339.444	152.214	73.655	-464.552	-47.803	24.350	-0.795
	1700.00	58.030	388.994	342.256	158.013	79.454	-503.277	-47.651	28.855	-0.887
	1800.00	58.112	392.313	344.946	163.820	85.261	-542.344	-47.502	33.351	-0.968
	1900.00	58.190	395.457	347.523	169.635	91.076	-581.734	-47.357	37.839	-1.040
	2000.00	58.266	398.444	349.995	175.458	96.899	-621.430	-47.216	42.320	-1.105

References

Phase	H / S	C _p
GAS	Ja2	Pa2

S2Cl2

DISULFUR DICHLORIDE

135.037

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
LIQ	298.15	124.290	223.844	223.844	-58.158	0.000	-124.897	-58.158	-39.260	6.878
	300.00	124.290	224.613	223.846	-57.928	0.230	-125.312	-58.075	-39.143	6.815
	400.00	124.290	260.369	228.721	-45.499	12.659	-149.647	-58.276	-33.305	4.349
	410.23	124.290	263.508	229.550	-44.228	13.930	-152.326	-57.975	-32.670	4.160

References

Phase	H / S	C _p	Remarks
LIQ	Ja1	Ja1	Ja1 NBPT= 410.23

135.037

DISULFUR DICHLORIDE (GAS)

S₂Cl₂[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	72.772	327.298	327.298	-16.736	0.000	-114.320	-16.736	-28.683	5.025
	300.00	72.879	327.749	327.300	-16.601	0.135	-114.926	-16.748	-28.757	5.007
	400.00	77.022	349.347	330.216	-9.084	7.652	-148.822	-21.861	-32.481	4.242
	500.00	79.347	366.805	335.844	-1.256	15.480	-184.658	-25.408	-34.768	3.632
	600.00	80.828	381.411	342.255	6.758	23.494	-222.089	-28.181	-36.362	3.166
	700.00	81.851	393.952	348.766	14.895	31.631	-260.872	-30.340	-37.552	2.802
	800.00	82.587	404.933	355.114	23.119	39.855	-300.828	-32.541	-38.435	2.510
	900.00	83.125	414.693	361.202	31.406	48.142	-341.818	-140.393	-36.728	2.132
	1000.00	83.513	423.472	366.997	39.739	56.475	-383.733	-139.472	-25.259	1.319
	1100.00	83.778	431.445	372.499	48.104	64.840	-426.485	-138.544	-13.883	0.659
	1200.00	83.939	438.742	377.720	56.491	73.227	-470.000	-137.618	-2.591	0.113
	1300.00	84.005	445.464	382.676	64.889	81.625	-514.215	-136.701	8.624	-0.347
	1400.00	83.984	451.689	387.386	73.289	90.025	-559.076	-135.801	19.769	-0.738
	1500.00	83.882	457.481	391.868	81.683	98.419	-604.538	-134.923	30.851	-1.074

References

Phase	H / S	C _p
GAS	Ja1	Ja1

51.064

SULFUR MONOFLUORIDE (GAS)

SF[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	35.152	225.209	225.209	12.970	0.000	-54.176	12.970	-14.387	2.521
	300.00	35.173	225.426	225.209	13.035	0.065	-54.593	12.964	-14.557	2.535
	400.00	36.052	235.677	226.601	16.601	3.631	-77.670	10.341	-23.584	3.080
	500.00	36.557	243.781	229.255	20.233	7.263	-101.657	8.390	-31.863	3.329
	600.00	36.874	250.476	232.250	23.906	10.936	-126.380	6.750	-39.752	3.461
	700.00	37.089	256.178	235.271	27.605	14.635	-151.720	5.364	-47.392	3.536
	800.00	37.247	261.141	238.201	31.322	18.352	-177.591	3.919	-54.832	3.580
	900.00	37.368	265.535	240.999	35.053	22.083	-203.929	-50.381	-60.932	3.536
	1000.00	37.466	269.477	243.653	38.794	25.824	-230.683	-50.314	-62.108	3.244
	1100.00	37.548	273.052	246.166	42.545	29.575	-257.812	-50.259	-63.290	3.005
	1200.00	37.619	276.323	248.544	46.304	33.334	-285.283	-50.213	-64.477	2.807
	1300.00	37.683	279.336	250.799	50.069	37.099	-313.068	-50.175	-65.667	2.639
	1400.00	37.740	282.131	252.938	53.840	40.870	-341.143	-50.144	-66.860	2.495
	1500.00	37.793	284.737	254.972	57.617	44.647	-369.488	-50.120	-68.055	2.370
	1600.00	37.843	287.177	256.909	61.399	48.429	-398.085	-50.101	-69.251	2.261
	1700.00	37.891	289.473	258.758	65.185	52.215	-426.919	-50.088	-70.448	2.165
	1800.00	37.936	291.640	260.525	68.977	56.007	-455.975	-50.079	-71.646	2.079
	1900.00	37.979	293.692	262.217	72.772	59.802	-485.243	-50.076	-72.845	2.003
	2000.00	38.021	295.641	263.840	76.572	63.602	-514.710	-50.077	-74.043	1.934

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
GAS	298.15	44.913	257.718	257.718	-296.646	0.000	-373.485	-296.646	-303.464	53.166
	300.00	44.992	257.996	257.719	-296.563	0.083	-373.962	-296.663	-303.506	52.845
	400.00	48.867	271.497	259.533	-291.861	4.785	-400.459	-299.755	-305.565	39.903
	500.00	51.506	282.706	263.079	-286.832	9.814	-428.185	-301.993	-306.778	32.049
	600.00	53.225	292.260	267.166	-281.590	15.056	-456.946	-303.799	-307.556	26.775
	700.00	54.379	300.557	271.357	-276.206	20.440	-486.596	-305.275	-308.064	22.988
	800.00	55.183	307.874	275.473	-270.726	25.920	-517.024	-306.760	-308.362	20.134
	900.00	55.763	314.408	279.443	-265.177	31.469	-548.144	-361.066	-307.318	17.836
	1000.00	56.194	320.307	283.239	-259.578	37.068	-579.885	-360.982	-301.351	15.741
	1100.00	56.522	325.679	286.857	-253.941	42.705	-612.188	-360.895	-295.392	14.027
	1200.00	56.778	330.608	290.300	-248.276	48.370	-645.006	-360.806	-289.441	12.599
	1300.00	56.981	335.161	293.578	-242.588	54.058	-678.297	-360.718	-283.497	11.391
	1400.00	57.144	339.390	296.701	-236.881	59.765	-712.028	-360.633	-277.560	10.356
	1500.00	57.277	343.338	299.680	-231.160	65.486	-746.166	-360.553	-271.629	9.459
	1600.00	57.388	347.038	302.525	-225.426	71.220	-780.687	-360.478	-265.704	8.674
	1700.00	57.480	350.520	305.247	-219.683	76.963	-815.566	-360.408	-259.783	7.982
	1800.00	57.558	353.807	307.855	-213.931	82.715	-850.784	-360.346	-253.865	7.367
	1900.00	57.624	356.921	310.356	-208.172	88.474	-886.322	-360.290	-247.951	6.817
	2000.00	57.681	359.878	312.759	-202.406	94.240	-922.163	-360.242	-242.040	6.321

References

Phase	H / S	C _p
GAS	Ja1	Ja1

89.061

SULFUR TRIFLUORIDE (GAS)

SF3[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [—]
GAS	298.15	62.982	286.295	286.295	-503.030	0.000	-588.389	-503.030	-488.136	85.519
	300.00	63.134	286.685	286.296	-502.913	0.117	-588.919	-503.042	-488.044	84.976
	400.00	69.750	305.830	288.861	-496.243	6.787	-618.575	-505.773	-482.871	63.056
	500.00	73.774	321.863	293.903	-489.050	13.980	-649.981	-507.528	-476.961	49.828
	600.00	76.283	335.552	299.732	-481.538	21.492	-682.869	-508.801	-470.718	40.980
	700.00	77.928	347.443	305.717	-473.822	29.208	-717.032	-509.720	-464.296	34.646
	800.00	79.057	357.927	311.601	-465.969	37.061	-752.311	-510.636	-457.746	29.888
	900.00	79.863	367.288	317.278	-458.021	45.009	-788.580	-564.366	-449.925	26.113
	1000.00	80.456	375.735	322.708	-450.004	53.026	-825.738	-563.704	-437.245	22.839
	1100.00	80.904	383.425	327.884	-441.935	61.095	-863.702	-563.037	-424.631	20.164
	1200.00	81.251	390.480	332.810	-433.826	69.204	-902.402	-562.369	-412.078	17.937
	1300.00	81.524	396.995	337.500	-425.687	77.343	-941.780	-561.704	-399.581	16.055
	1400.00	81.743	403.045	341.968	-417.523	85.507	-981.786	-561.043	-387.135	14.444
	1500.00	81.921	408.691	346.230	-409.340	93.690	-1022.376	-560.389	-374.736	13.049
	1600.00	82.066	413.982	350.301	-401.140	101.890	-1063.512	-559.743	-362.380	11.830
	1700.00	82.188	418.961	354.195	-392.927	110.103	-1105.162	-559.105	-350.064	10.756
	1800.00	82.289	423.662	357.925	-384.703	118.327	-1147.295	-558.476	-337.786	9.802
	1900.00	82.374	428.114	361.503	-376.470	126.560	-1189.886	-557.858	-325.542	8.950
	2000.00	82.447	432.341	364.940	-368.229	134.801	-1232.910	-557.250	-313.331	8.183

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
GAS	298.15	77.607	299.684	299.684	-763.162	0.000	-852.513	-763.162	-722.029	126.496
	300.00	77.821	300.165	299.685	-763.018	0.144	-853.068	-763.176	-721.773	125.672
	400.00	87.457	323.969	302.865	-754.720	8.442	-884.308	-765.887	-707.796	92.429
	500.00	93.526	344.190	309.161	-745.647	17.515	-917.742	-767.442	-693.109	72.409
	600.00	97.365	361.607	316.485	-736.089	27.073	-953.053	-768.406	-678.140	59.037
	700.00	99.902	376.819	324.041	-726.217	36.945	-989.990	-768.944	-663.051	49.477
	800.00	101.653	390.280	331.495	-716.134	47.028	-1028.358	-769.433	-647.891	42.303
	900.00	102.907	402.329	338.708	-705.903	57.259	-1067.999	-822.704	-631.515	36.652
	1000.00	103.833	413.222	345.624	-695.564	67.598	-1108.786	-821.560	-610.333	31.881
	1100.00	104.536	423.153	352.227	-685.144	78.018	-1150.612	-820.396	-589.267	27.982
	1200.00	105.082	432.273	358.523	-674.662	88.500	-1193.389	-819.218	-568.307	24.738
	1300.00	105.512	440.701	364.524	-664.131	99.031	-1237.043	-818.035	-547.445	21.997
	1400.00	105.858	448.534	370.248	-653.562	109.600	-1281.510	-816.851	-526.675	19.650
	1500.00	106.140	455.847	375.714	-642.962	120.200	-1326.733	-815.668	-505.990	17.620
	1600.00	106.372	462.705	380.939	-632.336	130.826	-1372.664	-814.490	-485.383	15.846
	1700.00	106.566	469.160	385.940	-621.689	141.473	-1419.260	-813.318	-464.850	14.283
	1800.00	106.729	475.256	390.734	-611.024	152.138	-1466.484	-812.155	-444.385	12.896
	1900.00	106.867	481.030	395.336	-600.344	162.818	-1514.301	-811.002	-423.985	11.656
	2000.00	106.985	486.515	399.759	-589.651	173.511	-1562.680	-809.859	-403.645	10.542

References

Phase	H / S	C _p
GAS	Ja1	Ja1

127.058

SULFUR PENTAFLUORIDE (GAS)

SF5[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [—]
kJ / mol										
GAS	298.15	89.649	304.705	304.705	-908.346	0.000	-999.194	-908.346	-838.478	146.898
	300.00	89.983	305.260	304.706	-908.180	0.166	-999.758	-908.367	-838.044	145.916
	400.00	104.383	333.287	308.429	-898.403	9.943	-1031.718	-911.205	-814.397	106.349
	500.00	113.076	357.594	315.890	-887.494	20.852	-1066.291	-912.606	-790.044	82.535
	600.00	118.465	378.723	324.641	-875.897	32.449	-1103.131	-913.267	-765.456	66.639
	700.00	121.980	397.267	333.719	-863.863	44.483	-1141.949	-913.419	-740.806	55.280
	800.00	124.382	413.721	342.711	-851.537	56.809	-1182.514	-913.468	-716.144	46.759
	900.00	126.090	428.475	351.435	-839.009	69.337	-1224.637	-966.266	-690.324	40.065
	1000.00	127.345	441.828	359.817	-826.334	82.012	-1268.163	-964.627	-659.751	34.462
	1100.00	128.297	454.012	367.834	-813.550	94.796	-1312.964	-962.951	-629.344	29.885
	1200.00	129.036	465.209	375.489	-800.682	107.664	-1358.933	-961.252	-599.091	26.078
	1300.00	129.626	475.561	382.793	-787.748	120.598	-1405.978	-959.538	-568.981	22.862
	1400.00	130.107	485.186	389.768	-774.761	133.585	-1454.021	-957.817	-539.002	20.110
	1500.00	130.508	494.176	396.432	-761.729	146.617	-1502.994	-956.092	-509.147	17.730
	1600.00	130.849	502.610	402.807	-748.661	159.685	-1552.837	-954.366	-479.407	15.651
	1700.00	131.147	510.552	408.914	-735.561	172.785	-1603.499	-952.643	-449.775	13.820
	1800.00	131.411	518.056	414.771	-722.433	185.913	-1654.933	-950.923	-420.244	12.195
	1900.00	131.650	525.167	420.395	-709.280	199.066	-1707.097	-949.207	-390.809	10.744
	2000.00	131.871	531.926	425.804	-696.103	212.243	-1759.955	-947.497	-361.464	9.440

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
GAS	298.15	96.963	291.734	291.734	-1220.473	0.000	-1307.454	-1220.473	-1116.506	195.607
	300.00	97.391	292.335	291.736	-1220.293	0.180	-1307.994	-1220.509	-1115.861	194.289
	400.00	116.369	323.150	295.808	-1209.536	10.937	-1338.796	-1223.974	-1080.667	141.121
	500.00	128.352	350.507	304.069	-1197.254	23.219	-1372.508	-1225.684	-1044.648	109.134
	600.00	136.062	374.638	313.862	-1184.007	36.466	-1408.790	-1226.431	-1008.354	87.785
	700.00	141.231	396.026	324.101	-1170.126	50.347	-1447.344	-1226.511	-971.996	72.531
	800.00	144.803	415.132	334.308	-1155.813	64.660	-1487.919	-1226.376	-935.646	61.091
	900.00	147.375	432.344	344.260	-1141.198	79.275	-1530.307	-1278.910	-898.165	52.128
	1000.00	149.271	447.974	353.862	-1126.361	94.112	-1574.335	-1276.949	-855.964	44.711
	1100.00	150.707	462.272	363.077	-1111.359	109.114	-1619.858	-1274.909	-813.964	38.652
	1200.00	151.819	475.435	371.899	-1096.230	124.243	-1666.752	-1272.813	-772.152	33.611
	1300.00	152.697	487.623	380.338	-1081.003	139.470	-1714.912	-1270.680	-730.517	29.353
	1400.00	153.402	498.965	388.411	-1065.697	154.776	-1764.248	-1268.521	-689.046	25.709
	1500.00	153.976	509.569	396.139	-1050.327	170.146	-1814.681	-1266.346	-647.731	22.556
	1600.00	154.449	519.522	403.542	-1034.905	185.568	-1866.140	-1264.162	-606.561	19.802
	1700.00	154.843	528.898	410.643	-1019.440	201.033	-1918.566	-1261.974	-565.528	17.377
	1800.00	155.175	537.758	417.461	-1003.938	216.535	-1971.903	-1259.787	-524.624	15.224
	1900.00	155.456	546.156	424.015	-988.406	232.067	-2026.102	-1257.604	-483.841	13.302
	2000.00	155.697	554.136	430.324	-972.848	247.625	-2081.120	-1255.428	-443.173	11.574

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	63.130	292.822	292.822	-401.246	0.000	-488.551	-401.246	-408.973	71.650
	300.00	63.282	293.213	292.823	-401.129	0.117	-489.093	-401.271	-409.020	71.217
	400.00	69.877	312.397	295.394	-394.445	6.801	-519.404	-406.963	-411.231	53.701
	500.00	73.877	328.457	300.445	-387.240	14.006	-551.469	-410.926	-411.880	43.029
	600.00	76.368	342.163	306.285	-379.719	21.527	-585.017	-414.030	-411.761	35.847
	700.00	77.999	354.066	312.279	-371.995	29.251	-619.841	-416.475	-411.186	30.683
	800.00	79.118	364.559	318.171	-364.136	37.110	-655.783	-418.942	-410.264	26.788
	900.00	79.915	373.926	323.855	-356.182	45.064	-692.716	-527.049	-406.721	23.605
	1000.00	80.502	382.378	329.292	-348.160	53.086	-730.538	-526.377	-393.388	20.548
	1100.00	80.944	390.072	334.473	-340.087	61.159	-769.166	-525.695	-380.122	18.050
	1200.00	81.286	397.131	339.404	-331.974	69.272	-808.531	-525.008	-366.918	15.972
	1300.00	81.555	403.648	344.099	-323.832	77.414	-848.574	-524.320	-353.772	14.215
	1400.00	81.770	409.700	348.571	-315.665	85.581	-889.245	-523.634	-340.678	12.711
	1500.00	81.944	415.348	352.837	-307.479	93.767	-930.501	-522.952	-327.634	11.409
	1600.00	82.086	420.641	356.911	-299.277	101.969	-972.303	-522.277	-314.635	10.272
	1700.00	82.204	425.621	360.807	-291.063	110.183	-1014.619	-521.609	-301.678	9.269
	1800.00	82.302	430.323	364.540	-282.837	118.409	-1057.418	-520.950	-288.760	8.380
	1900.00	82.385	434.775	368.120	-274.603	126.643	-1100.675	-520.299	-275.878	7.584
	2000.00	82.455	439.002	371.560	-266.361	134.885	-1144.365	-519.659	-263.030	6.870

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
GAS	298.15	176.696	397.171	397.171	-2064.386	0.000	-2182.803	-2064.386	-1861.371	326.104
	300.00	177.460	398.266	397.174	-2064.058	0.328	-2183.538	-2064.432	-1860.111	323.874
	400.00	211.399	454.318	404.585	-2044.493	19.893	-2226.220	-2070.097	-1791.578	233.956
	500.00	232.776	503.972	419.602	-2022.201	42.185	-2274.187	-2072.426	-1721.694	179.864
	600.00	246.422	547.707	437.385	-1998.193	66.193	-2326.817	-2072.935	-1651.469	143.773
	700.00	255.505	586.420	455.965	-1973.067	91.319	-2383.561	-2072.179	-1581.274	117.996
	800.00	261.758	620.971	474.470	-1947.185	117.201	-2443.962	-2071.047	-1511.221	98.673
	900.00	266.147	652.070	492.505	-1920.777	143.609	-2507.641	-2175.291	-1439.014	83.518
	1000.00	269.236	680.281	509.894	-1893.999	170.387	-2574.280	-2170.584	-1357.456	70.906
	1100.00	271.368	706.048	526.572	-1866.962	197.424	-2643.615	-2165.764	-1276.376	60.610
	1200.00	273.043	729.736	542.529	-1839.738	224.648	-2715.421	-2160.877	-1195.738	52.049
	1300.00	274.286	751.643	557.783	-1812.368	252.018	-2789.503	-2155.949	-1115.510	44.822
	1400.00	275.209	772.005	572.365	-1784.891	279.495	-2865.698	-2151.004	-1035.661	38.641
	1500.00	275.895	791.017	586.316	-1757.334	307.052	-2943.859	-2146.059	-956.167	33.297
	1600.00	276.410	808.840	599.672	-1729.718	334.668	-3023.861	-2141.129	-877.001	28.631
	1700.00	276.803	825.609	612.474	-1702.056	362.330	-3105.592	-2136.220	-798.144	24.524
	1800.00	277.111	841.440	624.759	-1674.360	390.026	-3188.952	-2131.340	-719.574	20.882
	1900.00	277.364	856.430	636.561	-1646.636	417.750	-3273.852	-2126.492	-641.275	17.630
	2000.00	277.586	870.662	647.913	-1618.888	445.498	-3360.213	-2121.676	-563.231	14.710

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	31.665	222.092	222.092	263.592	0.000	197.375	263.592	235.497	–41.258
	300.00	31.688	222.288	222.092	263.651	0.059	196.964	263.582	235.323	–40.973
	400.00	32.687	231.549	223.348	266.872	3.280	174.253	260.763	226.081	–29.523
	500.00	33.436	238.927	225.751	270.180	6.588	150.717	258.699	217.627	–22.735
	600.00	34.063	245.080	228.474	273.556	9.964	126.508	257.007	209.581	–18.246
	700.00	34.610	250.372	231.233	276.990	13.398	101.729	255.610	201.788	–15.058
	800.00	35.094	255.026	233.922	280.476	16.884	76.455	254.182	194.195	–12.680
	900.00	35.525	259.185	236.502	284.007	20.415	50.740	199.918	187.938	–10.908
	1000.00	35.907	262.948	238.961	287.579	23.987	24.631	200.035	186.601	–9.747
	1100.00	36.243	266.387	241.300	291.187	27.595	–1.838	200.152	185.252	–8.797
	1200.00	36.534	269.553	243.525	294.826	31.234	–28.637	200.268	183.892	–8.005
	1300.00	36.781	272.487	245.641	298.492	34.900	–55.741	200.383	182.523	–7.334
	1400.00	36.985	275.221	247.657	302.181	38.589	–83.128	200.496	181.144	–6.759
	1500.00	37.146	277.778	249.581	305.888	42.296	–110.780	200.605	179.758	–6.260
	1600.00	37.264	280.179	251.419	309.608	46.016	–138.679	200.708	178.365	–5.823
	1700.00	37.341	282.441	253.178	313.339	49.747	–166.811	200.803	176.966	–5.437
	1800.00	37.375	284.577	254.864	317.075	53.483	–195.163	200.888	175.561	–5.095
	1900.00	37.368	286.597	256.481	320.813	57.221	–223.722	200.960	174.152	–4.788
	2000.00	37.318	288.513	258.035	324.547	60.955	–252.479	201.016	172.740	–4.511

References

Phase	H / S	C _p
GAS	Ja1	Ja1

SO[g]

SULFUR MONOXIDE (GAS)

48.065

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	30.185	221.945	221.945	5.021	0.000	-61.152	5.021	-21.012	3.681
	300.00	30.195	222.132	221.946	5.077	0.056	-61.563	5.008	-21.174	3.687
	400.00	31.510	230.979	223.143	8.155	3.134	-84.236	2.019	-29.697	3.878
	500.00	32.868	238.162	225.450	11.377	6.356	-107.704	-0.191	-37.392	3.906
	600.00	33.878	244.249	228.089	14.717	9.696	-131.832	-2.006	-44.653	3.887
	700.00	34.621	249.530	230.783	18.144	13.123	-156.527	-3.517	-51.639	3.853
	800.00	35.189	254.192	233.423	21.635	16.614	-181.718	-5.053	-58.411	3.814
	900.00	35.644	258.363	235.967	25.178	20.157	-207.349	-59.420	-63.833	3.705
	1000.00	36.027	262.139	238.398	28.762	23.741	-233.377	-59.402	-64.324	3.360
	1100.00	36.362	265.589	240.716	32.382	27.361	-259.766	-59.379	-64.817	3.078
	1200.00	36.667	268.766	242.922	36.033	31.012	-286.486	-59.351	-65.313	2.843
	1300.00	36.952	271.712	245.025	39.714	34.693	-313.512	-59.315	-65.811	2.644
	1400.00	37.223	274.461	247.031	43.423	38.402	-340.822	-59.272	-66.312	2.474
	1500.00	37.485	277.038	248.946	47.159	42.138	-368.398	-59.221	-66.817	2.327
	1600.00	37.741	279.465	250.778	50.920	45.899	-396.224	-59.161	-67.325	2.198
	1700.00	37.992	281.761	252.534	54.707	49.686	-424.287	-59.093	-67.837	2.084
	1800.00	38.240	283.939	254.219	58.518	53.497	-452.573	-59.016	-68.354	1.984
	1900.00	38.484	286.013	255.838	62.355	57.334	-481.071	-58.930	-68.875	1.893
	2000.00	38.724	287.994	257.397	66.215	61.194	-509.772	-58.836	-69.401	1.813
	2100.00	38.960	289.889	258.899	70.099	65.078	-538.667	-58.732	-69.931	1.739
	2200.00	39.191	291.706	260.349	74.007	68.986	-567.747	-58.621	-70.467	1.673
	2300.00	39.415	293.453	261.751	77.937	72.916	-597.006	-58.502	-71.008	1.613
	2400.00	39.633	295.136	263.107	81.890	76.869	-626.436	-58.375	-71.555	1.557
	2500.00	39.843	296.758	264.421	85.863	80.842	-656.031	-58.242	-72.107	1.507
	2600.00	40.043	298.324	265.695	89.858	84.837	-685.786	-58.102	-72.664	1.460
	2700.00	40.232	299.839	266.932	93.872	88.851	-715.694	-57.957	-73.227	1.417
	2800.00	40.410	301.306	268.133	97.904	92.883	-745.752	-57.808	-73.795	1.377
	2900.00	40.574	302.727	269.302	101.953	96.932	-775.954	-57.655	-74.369	1.340
	3000.00	40.723	304.105	270.439	106.018	100.997	-806.296	-57.499	-74.948	1.305

References

Phase	H / S	C _p
GAS	Ja1	Ja1

64.065

SULFUR DIOXIDE (GAS)

SO2[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	39.900	248.221	248.221	–296.813	0.000	–370.820	–296.813	–300.098	52.576
	300.00	39.938	248.468	248.221	–296.739	0.074	–371.279	–296.836	–300.118	52.255
	400.00	43.363	260.395	249.824	–292.585	4.228	–396.743	–300.234	–300.942	39.299
	500.00	46.662	270.441	252.968	–288.077	8.736	–423.297	–302.687	–300.854	31.430
	600.00	49.145	279.179	256.624	–283.280	13.533	–450.787	–304.626	–300.294	26.143
	700.00	50.998	286.901	260.409	–278.269	18.544	–479.099	–306.178	–299.447	22.345
	800.00	52.414	293.807	264.159	–273.095	23.718	–508.140	–307.701	–298.383	19.482
	900.00	53.526	300.047	267.806	–267.796	29.017	–537.838	–362.014	–295.973	17.178
	1000.00	54.418	305.734	271.318	–262.397	34.416	–568.131	–361.913	–288.640	15.077
	1100.00	55.147	310.956	274.688	–256.918	39.895	–598.970	–361.785	–281.319	13.359
	1200.00	55.753	315.781	277.914	–251.372	45.441	–630.309	–361.636	–274.011	11.927
	1300.00	56.260	320.265	281.001	–245.770	51.043	–662.114	–361.472	–266.715	10.717
	1400.00	56.690	324.450	283.957	–240.122	56.691	–694.352	–361.296	–259.433	9.680
	1500.00	57.056	328.374	286.788	–234.435	62.378	–726.996	–361.113	–252.163	8.781
	1600.00	57.369	332.067	289.504	–228.713	68.100	–760.020	–360.927	–244.906	7.995
	1700.00	57.638	335.553	292.111	–222.962	73.851	–793.402	–360.741	–237.660	7.302
	1800.00	57.871	338.854	294.617	–217.187	79.626	–827.124	–360.558	–230.425	6.687
	1900.00	58.075	341.989	297.029	–211.389	85.424	–861.167	–360.380	–223.201	6.136
	2000.00	58.253	344.972	299.352	–205.572	91.241	–895.517	–360.211	–215.985	5.641
	2100.00	58.411	347.818	301.593	–199.739	97.074	–930.157	–360.051	–208.778	5.193
	2200.00	58.554	350.539	303.756	–193.891	102.922	–965.076	–359.903	–201.578	4.786
	2300.00	58.685	353.145	305.847	–188.029	108.784	–1000.261	–359.768	–194.384	4.415
	2400.00	58.809	355.645	307.870	–182.154	114.659	–1035.702	–359.645	–187.196	4.074
	2500.00	58.927	358.048	309.830	–176.267	120.546	–1071.387	–359.536	–180.013	3.761
	2600.00	59.045	360.361	311.729	–170.368	126.445	–1107.308	–359.440	–172.834	3.472
	2700.00	59.165	362.592	313.572	–164.458	132.355	–1143.457	–359.357	–165.659	3.205
	2800.00	59.289	364.746	315.361	–158.535	138.278	–1179.824	–359.286	–158.486	2.957
	2900.00	59.422	366.829	317.100	–152.600	144.213	–1216.403	–359.226	–151.316	2.725
	3000.00	59.566	368.846	318.792	–146.651	150.162	–1253.188	–359.174	–144.147	2.510

References

Phase	H / S	C _p
GAS	Co1	Ja1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]		[—————]			[————— kJ / mol —————]			[-]
GAS	298.15	50.701	256.773	256.773	-395.765	0.000	-472.322	-395.765	-371.017	65.001
	300.00	50.799	257.087	256.774	-395.671	0.094	-472.797	-395.795	-370.864	64.573
	400.00	57.477	272.593	258.842	-390.265	5.500	-499.302	-399.426	-362.240	47.304
	500.00	63.234	286.070	262.969	-384.215	11.550	-527.249	-401.867	-352.675	36.844
	600.00	67.412	297.988	267.832	-377.671	18.094	-556.464	-403.638	-342.658	29.831
	700.00	70.456	308.620	272.913	-370.770	24.995	-586.804	-404.929	-332.389	24.803
	800.00	72.736	318.184	277.985	-363.605	32.160	-618.153	-406.129	-321.945	21.021
	900.00	74.491	326.857	282.941	-356.240	39.525	-650.411	-460.079	-310.198	18.003
	1000.00	75.873	334.780	287.734	-348.719	47.046	-683.499	-459.586	-293.571	15.335
	1100.00	76.980	342.065	292.347	-341.075	54.690	-717.346	-459.048	-276.995	13.153
	1200.00	77.878	348.803	296.774	-333.330	62.435	-751.894	-458.475	-260.470	11.338
	1300.00	78.614	355.067	301.020	-325.504	70.261	-787.091	-457.878	-243.993	9.804
	1400.00	79.220	360.916	305.092	-317.612	78.153	-822.893	-457.264	-227.563	8.490
	1500.00	79.720	366.399	308.998	-309.664	86.101	-859.262	-456.642	-211.178	7.354
	1600.00	80.134	371.557	312.748	-301.670	94.095	-896.162	-456.017	-194.834	6.361
	1700.00	80.476	376.426	316.352	-293.639	102.126	-933.564	-455.396	-178.529	5.486
	1800.00	80.759	381.034	319.819	-285.577	110.188	-971.439	-454.785	-162.261	4.709
	1900.00	80.992	385.407	323.157	-277.489	118.276	-1009.763	-454.187	-146.026	4.015
	2000.00	81.185	389.567	326.374	-269.380	126.385	-1048.513	-453.606	-129.822	3.391
	2100.00	81.345	393.532	329.478	-261.253	134.512	-1087.670	-453.046	-113.646	2.827
	2200.00	81.479	397.319	332.477	-253.112	142.653	-1127.214	-452.509	-97.497	2.315
	2300.00	81.594	400.943	335.375	-244.958	150.807	-1167.128	-451.997	-81.372	1.848
	2400.00	81.696	404.418	338.180	-236.794	158.971	-1207.397	-451.511	-65.268	1.421
	2500.00	81.790	407.755	340.897	-228.619	167.146	-1248.007	-451.052	-49.184	1.028
	2600.00	81.882	410.965	343.530	-220.436	175.329	-1288.944	-450.619	-33.118	0.665
	2700.00	81.976	414.057	346.086	-212.243	183.522	-1330.196	-450.213	-17.068	0.330
	2800.00	82.078	417.040	348.567	-204.040	191.725	-1371.752	-449.831	-1.033	0.019
	2900.00	82.192	419.922	350.978	-195.827	199.938	-1413.601	-449.471	14.989	-0.270
	3000.00	82.324	422.711	353.323	-187.601	208.164	-1455.733	-449.132	30.999	-0.540

References

Phase	H / S	C _p
GAS	Ja1	Ja1

80.131

DISULFUR OXIDE (GAS)

S2O[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	44.126	267.049	267.049	-56.484	0.000	-136.105	-56.484	-86.407	15.138
	300.00	44.191	267.322	267.049	-56.402	0.082	-136.599	-56.514	-86.593	15.077
	400.00	47.748	280.533	268.826	-51.802	4.682	-164.015	-62.561	-96.198	12.562
	500.00	50.416	291.492	272.294	-46.885	9.599	-192.631	-66.978	-104.138	10.879
	600.00	52.240	300.856	276.293	-41.746	14.738	-222.260	-70.571	-111.214	9.682
	700.00	53.512	309.010	280.397	-36.455	20.029	-252.762	-73.527	-117.750	8.787
	800.00	54.429	316.218	284.433	-31.056	25.428	-284.031	-76.516	-123.867	8.088
	900.00	55.112	322.671	288.330	-25.577	30.907	-315.981	-185.153	-127.296	7.388
	1000.00	55.635	328.506	292.060	-20.039	36.445	-348.544	-185.015	-120.875	6.314
	1100.00	56.043	333.828	295.619	-14.454	42.030	-381.665	-184.870	-114.468	5.436
	1200.00	56.367	338.719	299.010	-8.833	47.651	-415.295	-184.720	-108.074	4.704
	1300.00	56.628	343.241	302.240	-3.183	53.301	-449.396	-184.569	-101.693	4.086
	1400.00	56.841	347.446	305.321	2.491	58.975	-483.933	-184.420	-95.324	3.557
	1500.00	57.015	351.374	308.261	8.184	64.668	-518.876	-184.275	-88.965	3.098
	1600.00	57.158	355.058	311.072	13.893	70.377	-554.200	-184.136	-82.615	2.697
	1700.00	57.276	358.527	313.763	19.615	76.099	-589.881	-184.006	-76.274	2.344
	1800.00	57.375	361.804	316.341	25.348	81.832	-625.899	-183.884	-69.941	2.030
	1900.00	57.457	364.908	318.817	31.089	87.573	-662.236	-183.774	-63.613	1.749
	2000.00	57.525	367.857	321.196	36.839	93.323	-698.875	-183.675	-57.292	1.496
	2100.00	57.583	370.665	323.485	42.594	99.078	-735.802	-183.589	-50.975	1.268
	2200.00	57.632	373.345	325.691	48.355	104.839	-773.004	-183.516	-44.662	1.060
	2300.00	57.675	375.908	327.819	54.120	110.604	-810.467	-183.458	-38.351	0.871
	2400.00	57.712	378.363	329.874	59.890	116.374	-848.182	-183.414	-32.043	0.697
	2500.00	57.746	380.720	331.861	65.663	122.147	-886.137	-183.384	-25.737	0.538
	2600.00	57.779	382.985	333.784	71.439	127.923	-924.323	-183.370	-19.431	0.390
	2700.00	57.811	385.166	335.647	77.218	133.702	-962.731	-183.369	-13.126	0.254
	2800.00	57.843	387.269	337.453	83.001	139.485	-1001.353	-183.383	-6.821	0.127
	2900.00	57.877	389.300	339.206	88.787	145.271	-1040.182	-183.411	-0.514	0.009
	3000.00	57.915	391.263	340.909	94.577	151.061	-1079.211	-183.451	5.793	-0.101

References

Phase	H / S	C _p
GAS	Ja1	Ja1

SOCI2[g]

SULFINYL DICHLORIDE (GAS)

118.971

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
GAS	298.15	66.575	308.052	308.052	-212.338	0.000	-304.184	-212.338	-197.522	34.605
	300.00	66.709	308.464	308.053	-212.215	0.123	-304.754	-212.347	-197.430	34.376
	400.00	71.679	328.423	310.741	-205.265	7.073	-336.634	-214.931	-192.309	25.113
	500.00	74.366	344.731	315.959	-197.952	14.386	-370.317	-216.620	-186.478	19.481
	600.00	76.155	358.457	321.928	-190.421	21.917	-405.495	-217.880	-180.321	15.698
	700.00	77.519	370.302	328.012	-182.735	29.603	-441.946	-218.808	-173.986	12.983
	800.00	78.657	380.730	333.963	-174.924	37.414	-479.508	-219.731	-167.521	10.938
	900.00	79.663	390.053	339.686	-167.008	45.330	-518.055	-273.449	-159.786	9.274
	1000.00	80.588	398.495	345.151	-158.995	53.343	-557.489	-272.744	-147.194	7.689
	1100.00	81.459	406.217	350.357	-150.892	61.446	-597.730	-271.991	-134.675	6.395

References

Phase	H / S	C _p
GAS	Tk1	La1

SO2Cl2[g]

SULFONYL DICHLORIDE (GAS)

134.970

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
GAS	298.15	77.107	311.106	311.106	-354.803	0.000	-447.559	-354.803	-310.315	54.366
	300.00	77.271	311.584	311.108	-354.660	0.143	-448.135	-354.820	-310.039	53.983
	400.00	85.169	334.949	314.240	-346.519	8.284	-480.499	-357.698	-294.912	38.512
	500.00	90.715	354.589	320.398	-337.707	17.096	-515.002	-359.418	-279.031	29.150
	600.00	94.552	371.488	327.538	-328.433	26.370	-551.326	-360.514	-262.839	22.882
	700.00	97.305	386.281	334.895	-318.833	35.970	-589.230	-361.155	-246.506	18.394
	800.00	99.350	399.414	342.155	-308.995	45.808	-628.527	-361.720	-230.089	15.023
	900.00	100.908	411.210	349.183	-298.979	55.824	-669.068	-415.041	-212.450	12.330
	1000.00	102.115	421.907	355.929	-288.825	65.978	-710.732	-413.926	-189.999	9.925
	1100.00	103.062	431.686	362.378	-278.565	76.238	-753.419	-412.770	-167.662	7.962
	1200.00	103.808	440.687	368.534	-268.220	86.583	-797.043	-411.586	-145.431	6.330
	1300.00	104.400	449.020	374.408	-257.808	96.995	-841.534	-410.385	-123.300	4.954
	1400.00	104.871	456.775	380.018	-247.344	107.459	-886.828	-409.174	-101.262	3.778
	1500.00	105.249	464.023	385.379	-236.837	117.966	-932.872	-407.961	-79.311	2.762
	1600.00	105.558	470.826	390.509	-226.296	128.507	-979.618	-406.751	-57.440	1.875
	1700.00	105.817	477.234	395.424	-215.727	139.076	-1027.024	-405.550	-35.645	1.095
	1800.00	106.045	483.289	400.139	-205.134	149.669	-1075.053	-404.360	-13.921	0.404
	1900.00	106.259	489.028	404.668	-194.518	160.285	-1123.671	-403.182	7.738	-0.213
	2000.00	106.473	494.484	409.023	-183.882	170.921	-1172.849	-402.018	29.335	-0.766

References

Phase	H / S	C _p
GAS	Ja1	Ja1

86.062

SULFINYL DIFLUORIDE (GAS)

SOF2[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
GAS	298.15	57.113	279.140	279.140	-543.920	0.000	-627.146	-543.920	-526.543	92.248
	300.00	57.257	279.494	279.141	-543.814	0.106	-627.662	-543.941	-526.435	91.660
	400.00	64.244	296.971	281.477	-537.722	6.198	-656.511	-547.130	-520.354	67.951
	500.00	69.098	311.864	286.102	-531.039	12.881	-686.971	-549.242	-513.433	53.638
	600.00	72.383	324.771	291.496	-523.955	19.965	-718.817	-550.786	-506.115	44.061
	700.00	74.685	336.112	297.076	-516.595	27.325	-751.873	-551.913	-498.578	37.204
	800.00	76.356	346.199	302.598	-509.039	34.881	-785.998	-552.991	-490.886	32.052
	900.00	77.605	355.268	307.955	-501.338	42.582	-821.079	-606.847	-481.905	27.969
	1000.00	78.558	363.496	313.104	-493.527	50.393	-857.024	-606.283	-468.052	24.449
	1100.00	79.297	371.020	318.032	-485.633	58.287	-893.755	-605.692	-454.257	21.571
	1200.00	79.876	377.946	322.740	-477.673	66.247	-931.208	-605.084	-440.517	19.175
	1300.00	80.334	384.358	327.236	-469.662	74.258	-969.327	-604.464	-426.828	17.150
	1400.00	80.698	390.325	331.532	-461.610	82.310	-1008.065	-603.841	-413.187	15.416
	1500.00	80.991	395.903	335.639	-453.525	90.395	-1047.379	-603.217	-399.591	13.915
	1600.00	81.230	401.138	339.571	-445.413	98.507	-1087.234	-602.597	-386.036	12.603
	1700.00	81.430	406.069	343.339	-437.280	106.640	-1127.597	-601.984	-372.520	11.446
	1800.00	81.605	410.728	346.955	-429.128	114.792	-1168.438	-601.379	-359.040	10.419
	1900.00	81.765	415.144	350.428	-420.960	122.960	-1209.734	-600.784	-345.593	9.501
	2000.00	81.920	419.342	353.770	-412.775	131.145	-1251.460	-600.198	-332.177	8.676

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		[-]
GAS	298.15	65.840	283.617	283.617	-758.559	0.000	-843.119	-758.559	-711.934	124.728
	300.00	66.054	284.025	283.619	-758.437	0.122	-843.645	-758.591	-711.645	123.908
	400.00	76.508	304.527	286.343	-751.285	7.274	-873.096	-762.206	-695.678	90.846
	500.00	84.012	322.455	291.811	-743.237	15.322	-904.465	-764.482	-678.795	70.913
	600.00	89.319	338.268	298.263	-734.556	24.003	-937.517	-766.009	-661.501	57.589
	700.00	93.190	352.342	305.002	-725.421	33.138	-972.060	-766.988	-644.001	48.056
	800.00	96.078	364.984	311.723	-715.950	42.609	-1007.937	-767.821	-626.374	40.898
	900.00	98.247	376.431	318.287	-706.229	52.330	-1045.017	-821.359	-607.494	35.258
	1000.00	99.851	386.870	324.631	-696.320	62.239	-1083.190	-820.427	-583.781	30.494
	1100.00	101.140	396.450	330.731	-686.267	72.292	-1122.363	-819.433	-560.164	26.600
	1200.00	102.147	405.295	336.581	-676.101	82.458	-1162.456	-818.392	-536.640	23.359
	1300.00	102.953	413.505	342.186	-665.845	92.714	-1203.401	-817.319	-513.203	20.621
	1400.00	103.610	421.159	347.557	-655.516	103.043	-1245.138	-816.225	-489.851	18.277
	1500.00	104.153	428.326	352.705	-645.127	113.432	-1287.616	-815.118	-466.577	16.248
	1600.00	104.606	435.063	357.644	-634.688	123.871	-1330.789	-814.005	-443.377	14.475
	1700.00	104.987	441.417	362.387	-624.208	134.351	-1374.616	-812.891	-420.247	12.913
	1800.00	105.310	447.427	366.946	-613.692	144.867	-1419.061	-811.781	-397.182	11.526
	1900.00	105.582	453.128	371.333	-603.147	155.412	-1464.091	-810.679	-374.179	10.287
	2000.00	105.813	458.550	375.559	-592.577	165.982	-1509.677	-809.588	-351.234	9.173

References

Phase	H / S	C _p
GAS	Ja1	Ja1

121.750

ANTIMONY

Sb

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [- -]
SOL	298.15	25.230	45.522	45.522	0.000	0.000	-13.572	0.000	0.000	0.000
	300.00	25.249	45.678	45.522	0.047	0.047	-13.657	0.000	0.000	0.000
	400.00	25.938	53.048	46.523	2.610	2.610	-18.609	0.000	0.000	0.000
	500.00	26.464	58.891	48.432	5.230	5.230	-24.216	0.000	0.000	0.000
	600.00	27.143	63.772	50.592	7.908	7.908	-30.355	0.000	0.000	0.000
	700.00	28.084	68.023	52.785	10.667	10.667	-36.949	0.000	0.000	0.000
	800.00	29.331	71.851	54.933	13.535	13.535	-43.946	0.000	0.000	0.000
	900.00	30.908	75.394	57.011	16.544	16.544	-51.310	0.000	0.000	0.000
	904.00	30.978	75.531	57.093	16.668	16.668	-51.612	0.000	0.000	0.000
LIQ			21.985		19.874					
	904.00	31.380	97.516	57.093	36.542	36.542	-51.612	0.000	0.000	0.000
	1000.00	31.380	100.683	61.128	39.555	39.555	-61.128	0.000	0.000	0.000
	1100.00	31.380	103.674	64.862	42.693	42.693	-71.348	0.000	0.000	0.000
	1200.00	31.380	106.404	68.212	45.831	45.831	-81.854	0.000	0.000	0.000
	1300.00	31.380	108.916	71.248	48.969	48.969	-92.622	0.000	0.000	0.000
	1400.00	31.380	111.241	74.022	52.107	52.107	-103.631	0.000	0.000	0.000
	1500.00	31.380	113.406	76.576	55.245	55.245	-114.865	0.000	0.000	0.000
	1600.00	31.380	115.431	78.942	58.383	58.383	-126.308	0.000	0.000	0.000
	1700.00	31.380	117.334	81.145	61.521	61.521	-137.947	0.000	0.000	0.000
	1800.00	31.380	119.127	83.206	64.659	64.659	-149.771	0.000	0.000	0.000
	1891.00	31.380	120.675	84.972	67.514	67.514	-160.682	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL	Hu1	Hu1	
LIQ	Hu1	Hu1	Hu1,e BPT=1891. GAS(Sb2),L=77.75kJ / NBPT=1860. GAS(Sb4+Sb2+Sb)

Sb[g]

ANTIMONY (GAS)

121.750

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
GAS	298.15	20.786	180.264	180.264	264.554	0.000	210.808	264.554	224.381	-39.311
	300.00	20.786	180.393	180.264	264.592	0.038	210.475	264.546	224.131	-39.025
	400.00	20.786	186.372	181.080	266.671	2.117	192.122	264.061	210.731	-27.519
	500.00	20.786	191.011	182.619	268.750	4.196	173.244	263.520	197.460	-20.629
	600.00	20.786	194.801	184.343	270.828	6.274	153.948	262.920	184.303	-16.045
	700.00	20.786	198.005	186.072	272.907	8.353	134.304	262.240	171.253	-12.779
	800.00	20.786	200.780	187.741	274.986	10.432	114.361	261.450	158.307	-10.336
	900.00	20.801	203.230	189.328	277.065	12.511	94.158	260.521	145.469	-8.443
	1000.00	20.803	205.421	190.830	279.145	14.591	73.724	239.591	134.852	-7.044
	1100.00	20.810	207.404	192.248	281.226	16.672	53.081	238.533	124.429	-5.909
	1200.00	20.831	209.216	193.588	283.308	18.754	32.249	237.477	114.103	-4.967
	1300.00	20.873	210.885	194.855	285.393	20.839	11.243	236.424	103.864	-4.173
	1400.00	20.941	212.434	196.056	287.483	22.929	-9.924	235.377	93.707	-3.496
	1500.00	21.037	213.882	197.197	289.582	25.028	-31.241	234.337	83.624	-2.912
	1600.00	21.163	215.243	198.282	291.692	27.138	-52.698	233.309	73.610	-2.403
	1700.00	21.321	216.531	199.318	293.816	29.262	-74.287	232.295	63.660	-1.956
	1800.00	21.511	217.755	200.309	295.957	31.403	-96.002	231.298	53.769	-1.560
	1900.00	21.736	218.924	201.258	298.119	33.565	-117.836	152.692	44.216	-1.216
	2000.00	21.994	220.045	202.169	300.305	35.751	-139.785	153.009	38.499	-1.005

References

Phase	H / S	C _p
GAS	Hu1	Hu1

243.500

ANTIMONY (GAS)

Sb2[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	36.349	254.915	254.915	231.208	0.000	155.205	231.208	182.350	-31.947
	300.00	36.361	255.140	254.916	231.275	0.067	154.733	231.182	182.047	-31.697
	400.00	36.807	265.670	256.348	234.937	3.729	128.669	229.717	165.887	-21.663
	500.00	37.015	273.908	259.066	238.629	7.421	101.675	228.170	150.106	-15.682
	600.00	37.129	280.668	262.120	242.337	11.129	73.936	226.521	134.647	-11.722
	700.00	37.200	286.397	265.190	246.053	14.845	45.575	224.719	119.474	-8.915
	800.00	37.247	291.368	268.158	249.776	18.568	16.682	222.706	104.574	-6.828
	900.00	37.281	295.757	270.986	253.502	22.294	-12.679	220.414	89.941	-5.220
	1000.00	37.306	299.686	273.663	257.232	26.024	-42.455	178.123	79.802	-4.168
	1100.00	37.325	303.243	276.193	260.963	29.755	-72.604	175.578	70.093	-3.328
	1200.00	37.341	306.491	278.584	264.697	33.489	-103.093	173.036	60.615	-2.639
	1300.00	37.354	309.481	280.847	268.432	37.224	-133.894	170.494	51.350	-2.063
	1400.00	37.357	312.249	282.993	272.167	40.959	-164.982	167.954	42.281	-1.578
	1500.00	37.363	314.827	285.030	275.903	44.695	-196.337	165.414	33.393	-1.163
	1600.00	37.369	317.238	286.968	279.640	48.432	-227.942	162.875	24.674	-0.806
	1700.00	37.375	319.504	288.816	283.377	52.169	-259.780	160.336	16.114	-0.495
	1800.00	37.381	321.640	290.581	287.115	55.907	-291.838	157.797	7.704	-0.224
	1900.00	37.388	323.662	292.269	290.853	59.645	-324.104	0.000	0.000	0.000
	2000.00	37.388	325.579	293.887	294.592	63.384	-356.567	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

Sb4[g]

ANTIMONY (GAS)

487.000

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
GAS	298.15	80.940	350.109	350.109	206.522	0.000	102.137	206.522	156.426	-27.405
	300.00	80.966	350.610	350.111	206.672	0.150	101.489	206.485	156.116	-27.182
	400.00	81.857	374.043	353.300	214.819	8.297	65.202	204.379	139.638	-18.235
	500.00	82.278	392.359	359.346	223.028	16.506	26.849	202.110	123.712	-12.924
	600.00	82.515	407.383	366.138	231.269	24.747	-13.161	199.636	108.261	-9.425
	700.00	82.664	420.114	372.962	239.528	33.006	-54.552	196.860	93.246	-6.958
	800.00	82.767	431.160	379.562	247.800	41.278	-97.128	193.660	78.657	-5.136
	900.00	82.843	440.913	385.847	256.081	49.559	-140.741	189.904	64.500	-3.743
	1000.00	82.902	449.644	391.798	264.368	57.846	-185.276	106.150	59.236	-3.094
	1100.00	82.950	457.548	397.422	272.661	66.139	-230.642	101.891	54.751	-2.600
	1200.00	82.990	464.767	402.738	280.958	74.436	-276.763	97.636	50.654	-2.205
	1300.00	83.025	471.412	407.768	289.259	82.737	-323.576	93.385	46.911	-1.885
	1400.00	83.013	477.563	412.536	297.559	91.037	-371.029	89.133	43.496	-1.623
	1500.00	83.027	483.291	417.065	305.861	99.339	-419.075	84.883	40.384	-1.406
	1600.00	83.042	488.650	421.373	314.165	107.643	-467.675	80.635	37.556	-1.226
	1700.00	83.056	493.684	425.480	322.470	115.948	-516.794	76.387	34.994	-1.075
	1800.00	83.070	498.432	429.402	330.776	124.254	-566.402	72.142	32.681	-0.948
	1900.00	62.141	502.478	433.150	338.246	131.724	-616.463	-243.460	31.745	-0.873
	2000.00	62.141	505.666	436.697	344.460	137.938	-666.872	-244.724	46.262	-1.208

References

Phase	H / S	C _p
GAS	Hu1	Hu1

SbBr3

ANTIMONY TRIBROMIDE

361.462

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
SOL	298.15	112.699	210.037	210.037	-259.408	0.000	-322.030	-259.408	-240.386	42.115
	300.00	112.926	210.735	210.039	-259.199	0.209	-322.420	-259.456	-240.268	41.834
	368.00	121.262	234.628	212.424	-251.237	8.171	-337.580	-303.193	-231.130	32.807
LIQ			39.793		14.644					
	368.00	135.143	274.422	212.424	-236.593	22.815	-337.580	-288.549	-231.130	32.807
	400.00	135.143	285.690	217.841	-232.268	27.140	-346.544	-286.811	-226.210	29.540
	500.00	135.143	315.846	234.538	-218.754	40.654	-376.677	-281.455	-211.682	22.114

References

Phase	H / S	C _p
SOL	Tk1	Ke1,e
LIQ	Tk1	e

361.462

ANTIMONY TRIBROMIDE (GAS)

SbBr3[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	79.959	374.536	374.536	-194.556	0.000	-306.224	-194.556	-224.579	39.345
	300.00	79.996	375.030	374.537	-194.408	0.148	-306.917	-194.665	-224.765	39.135
	400.00	81.332	398.254	377.694	-186.332	8.224	-345.634	-240.875	-225.300	29.421
	500.00	81.960	416.478	383.694	-178.164	16.392	-386.403	-240.865	-221.408	23.130
	600.00	82.308	431.454	390.443	-169.949	24.607	-428.822	-240.906	-217.514	18.936
	700.00	82.526	444.160	397.232	-161.707	32.849	-472.619	-241.026	-213.607	15.940
	800.00	82.673	455.190	403.803	-153.446	41.110	-517.598	-241.255	-209.676	13.690
	900.00	82.780	464.934	410.064	-145.174	49.382	-563.614	-241.627	-205.708	11.939
	1000.00	82.861	473.660	415.995	-136.891	57.665	-610.551	-262.004	-199.579	10.425
	1100.00	82.925	481.560	421.602	-128.602	65.954	-658.318	-262.512	-193.312	9.180
	1200.00	82.979	488.778	426.904	-120.307	74.249	-706.840	-263.024	-186.999	8.140
	1300.00	83.024	495.422	431.922	-112.006	82.550	-756.055	-263.540	-180.643	7.258
	1400.00	83.064	501.576	436.680	-103.702	90.854	-805.908	-264.061	-174.246	6.501
	1500.00	83.099	507.308	441.200	-95.394	99.162	-856.356	-264.586	-167.813	5.844

References

Phase	H / S	C _p
GAS	Pa2	Pa2

157.203

ANTIMONY MONOCHLORIDE (GAS)

SbCl[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	35.542	246.965	246.965	-10.665	0.000	-84.298	-10.665	-37.464	6.564
	300.00	35.559	247.185	246.966	-10.599	0.066	-84.755	-10.677	-37.631	6.552
	400.00	36.213	257.516	248.370	-7.007	3.658	-110.013	-11.382	-46.511	6.074
	500.00	36.560	265.637	251.040	-3.366	7.299	-136.185	-12.147	-55.206	5.767
	600.00	36.787	272.324	254.047	0.301	10.966	-163.093	-12.975	-63.741	5.549
	700.00	36.957	278.008	257.074	3.989	14.654	-190.617	-13.884	-72.131	5.382
	800.00	37.096	282.953	260.007	7.692	18.357	-218.670	-14.902	-80.384	5.249
	900.00	37.218	287.329	262.804	11.408	22.073	-247.188	-16.058	-88.502	5.136
	1000.00	37.330	291.256	265.456	15.135	25.800	-276.121	-37.212	-94.372	4.929
	1100.00	37.434	294.819	267.966	18.873	29.538	-305.428	-38.488	-100.026	4.750
	1200.00	37.533	298.080	270.342	22.622	33.287	-335.075	-39.760	-105.564	4.595
	1300.00	37.629	301.089	272.593	26.380	37.045	-365.035	-41.027	-110.996	4.460
	1400.00	37.722	303.881	274.729	30.147	40.812	-395.285	-42.288	-116.331	4.340
	1500.00	37.813	306.486	276.760	33.924	44.589	-425.805	-43.543	-121.576	4.234
	1600.00	37.903	308.929	278.695	37.710	48.375	-456.577	-44.793	-126.738	4.138
	1700.00	37.992	311.230	280.542	41.505	52.170	-487.586	-46.038	-131.821	4.050
	1800.00	38.080	313.404	282.308	45.308	55.973	-518.819	-47.278	-136.831	3.971
	1900.00	38.167	315.465	283.999	49.121	59.786	-550.263	-126.142	-141.490	3.890
	2000.00	38.254	317.425	285.622	52.942	63.607	-581.909	-126.103	-142.299	3.716

References

Phase	H / S	C _p
GAS	Tk1	e

SbCl3

ANTIMONY TRICHLORIDE

228.108

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	110.460	183.259	183.259	-381.162	0.000	-435.801	-381.162	-322.445	56.491
	300.00	110.855	183.944	183.261	-380.957	0.205	-436.140	-381.098	-322.081	56.079
	346.00	120.690	200.443	184.459	-375.632	5.530	-444.985	-379.311	-313.157	47.276
			36.277		12.552					
LIQ	346.00	123.428	236.720	184.459	-363.080	18.082	-444.985	-366.759	-313.157	47.276
	400.00	123.428	254.620	192.752	-356.415	24.747	-458.263	-364.320	-304.974	39.825

References

Phase	H / S	C _p
SOL	Tk1	Ku1,e
LIQ	Tk1	e

SbCl3[g]

ANTIMONY TRICHLORIDE (GAS)

228.108

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	76.721	338.595	338.595	-311.959	0.000	-412.911	-311.959	-299.555	52.481
	300.00	76.790	339.070	338.596	-311.817	0.142	-413.538	-311.958	-299.478	52.144
	400.00	79.370	361.560	341.645	-303.993	7.966	-448.617	-311.898	-295.328	38.566
	500.00	80.664	379.425	347.476	-295.985	15.974	-485.697	-311.866	-291.190	30.420
	600.00	81.387	394.201	354.068	-287.879	24.080	-524.400	-311.891	-287.054	24.990
	700.00	81.833	406.783	360.722	-279.716	32.243	-564.465	-312.003	-282.907	21.111
	800.00	82.131	417.731	367.179	-271.517	40.442	-605.702	-312.230	-278.736	18.200
	900.00	82.345	427.418	373.344	-263.293	48.666	-647.969	-312.603	-274.529	15.933
	1000.00	82.507	436.102	379.193	-255.050	56.909	-691.152	-332.982	-268.161	14.007

References

Phase	H / S	C _p
GAS	Tk1	Pa2

299.014

ANTIMONY PENTACHLORIDE (GAS)

SbCl₅[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	120.916	401.773	401.773	–388.819	0.000	–508.608	–388.819	–328.730	57.592
	300.00	121.051	402.522	401.776	–388.595	0.224	–509.352	–388.799	–328.357	57.172
	400.00	125.811	438.096	406.594	–376.218	12.601	–551.456	–387.653	–308.380	40.270
	500.00	128.014	466.434	415.825	–363.515	25.304	–596.732	–386.496	–288.697	30.160
	600.00	129.210	489.889	426.271	–350.648	38.171	–644.581	–385.396	–269.241	23.440
	700.00	129.932	509.866	436.821	–337.688	51.131	–694.594	–384.387	–249.964	18.653
	800.00	130.400	527.248	447.062	–324.670	64.149	–746.468	–383.500	–230.822	15.071

References

Phase	H / S	C _p
GAS	Tk1	e

140.748

ANTIMONY MONOFLUORIDE (GAS)

SbF[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	33.324	234.832	234.832	–74.128	0.000	–144.143	–74.128	–100.339	17.579
	300.00	33.342	235.038	234.832	–74.066	0.062	–144.578	–74.142	–100.502	17.499
	400.00	33.995	244.731	236.150	–70.695	3.433	–168.588	–74.941	–109.170	14.256
	500.00	34.342	252.357	238.656	–67.277	6.851	–193.456	–75.824	–117.627	12.288
	600.00	34.569	258.640	241.478	–63.831	10.297	–219.015	–76.793	–125.898	10.960
	700.00	34.739	263.982	244.321	–60.365	13.763	–245.153	–77.861	–133.999	9.999
	800.00	34.879	268.630	247.075	–56.884	17.244	–271.788	–79.051	–141.939	9.268
	900.00	35.001	272.746	249.703	–53.390	20.738	–298.861	–80.390	–149.722	8.690
	1000.00	35.112	276.439	252.195	–49.884	24.244	–326.323	–101.735	–155.236	8.109
	1100.00	35.216	279.791	254.554	–46.368	27.760	–354.137	–103.209	–160.515	7.622
	1200.00	35.315	282.859	256.787	–42.841	31.287	–382.272	–104.685	–165.659	7.211
	1300.00	35.411	285.690	258.902	–39.305	34.823	–410.701	–106.160	–170.680	6.858
	1400.00	35.504	288.317	260.911	–35.759	38.369	–439.403	–107.634	–175.588	6.551
	1500.00	35.596	290.770	262.821	–32.204	41.924	–468.359	–109.105	–180.391	6.282
	1600.00	35.686	293.070	264.640	–28.640	45.488	–497.552	–110.574	–185.095	6.043
	1700.00	35.775	295.236	266.377	–25.067	49.061	–526.968	–112.040	–189.708	5.829
	1800.00	35.863	297.283	268.037	–21.485	52.643	–556.595	–113.502	–194.235	5.637
	1900.00	35.950	299.225	269.628	–17.894	56.234	–586.422	–119.591	–198.397	5.454
	2000.00	36.037	301.071	271.155	–14.295	59.833	–616.437	–119.777	–198.698	5.189

References

Phase	H / S	C _p
GAS	Tk1	e

SbF3

ANTIMONY TRIFLUORIDE

178.745

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	90.223	127.235	127.235	-915.459	0.000	-953.394	-915.459	-849.127	148.764
	300.00	90.384	127.794	127.237	-915.292	0.167	-953.630	-915.426	-848.715	147.774
	400.00	99.095	154.989	130.886	-905.818	9.641	-967.814	-913.335	-826.778	107.966
	500.00	107.805	178.037	138.065	-895.473	19.986	-984.491	-910.655	-805.436	84.143
	560.00	113.031	190.545	143.025	-888.848	26.611	-995.553	-908.738	-792.919	73.960
LIQ			40.645		22.761					
	560.00	147.277	231.190	143.025	-866.087	49.372	-995.553	-885.977	-792.919	73.960
	600.00	147.277	241.351	149.245	-860.196	55.263	-1005.006	-883.266	-786.366	68.459
	619.00	147.277	245.942	152.143	-857.398	58.061	-1009.636	-881.989	-783.318	66.101

References

Phase	H / S	C _p	Remarks
SOL	Nb1/Pa2	Pa2	
LIQ	Pa2	Pa2	Pa2 NBPT= 619.

SbF3[g]

ANTIMONY TRIFLUORIDE (GAS)

178.745

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	68.256	303.031	303.031	-812.533	0.000	-902.882	-812.533	-798.614	139.914
	300.00	68.415	303.454	303.032	-812.407	0.126	-903.443	-812.540	-798.528	139.036
	400.00	74.107	324.027	305.799	-805.242	7.291	-934.852	-812.759	-793.817	103.662
	500.00	76.894	340.894	311.183	-797.678	14.855	-968.125	-812.859	-789.070	82.434
	600.00	78.536	355.069	317.348	-789.900	22.633	-1002.942	-812.970	-784.302	68.280
	700.00	79.638	367.263	323.628	-781.988	30.545	-1039.073	-813.142	-779.511	58.168
	800.00	80.452	377.953	329.764	-773.982	38.551	-1076.345	-813.413	-774.690	50.582
	900.00	81.099	387.468	335.657	-765.903	46.630	-1114.624	-813.815	-769.827	44.680
	1000.00	81.642	396.041	341.274	-757.766	54.767	-1153.807	-834.208	-762.801	39.845
	1100.00	82.118	403.845	346.613	-749.577	62.956	-1193.807	-834.717	-755.636	35.882
	1200.00	82.546	411.009	351.685	-741.344	71.189	-1234.554	-835.214	-748.424	32.578
	1300.00	82.943	417.632	356.506	-733.069	79.464	-1275.991	-835.697	-741.172	29.781
	1400.00	83.316	423.793	361.095	-724.756	87.777	-1318.065	-836.166	-733.883	27.382
	1500.00	83.671	429.553	365.469	-716.406	96.127	-1360.736	-836.620	-726.561	25.301

References

Phase	H / S	C _p
GAS	Pa2	Pa2

124.774

ANTIMONY TRIHYDRIDE (GAS)

SbH3[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	41.251	233.075	233.075	145.101	0.000	75.610	145.101	147.626	–25.863
	300.00	41.468	233.330	233.075	145.178	0.077	75.178	145.051	147.641	–25.707
	400.00	49.745	246.526	234.818	149.784	4.683	51.174	142.735	148.873	–19.441
	500.00	54.580	258.182	238.351	155.017	9.916	25.926	140.964	150.622	–15.735
	600.00	58.061	268.454	242.529	160.656	15.555	–0.417	139.531	152.692	–13.293
	700.00	60.903	277.624	246.899	166.608	21.507	–27.729	138.318	154.984	–11.565
	800.00	63.404	285.922	251.267	172.825	27.724	–55.912	137.238	157.440	–10.280
	900.00	65.706	293.524	255.545	179.282	34.181	–84.890	136.224	160.026	–9.288
	1000.00	67.885	300.561	259.699	185.963	40.862	–114.598	115.388	164.834	–8.610
	1100.00	69.984	307.130	263.716	192.857	47.756	–144.986	114.586	169.819	–8.064
	1200.00	72.029	313.307	267.594	199.958	54.857	–176.011	113.932	174.870	–7.612
	1300.00	74.034	319.152	271.337	207.261	62.160	–207.637	113.416	179.970	–7.231
	1400.00	76.012	324.711	274.952	214.764	69.663	–239.832	113.034	185.105	–6.906
	1500.00	77.969	330.022	278.448	222.463	77.362	–272.571	112.783	190.263	–6.626
	1600.00	79.910	335.116	281.832	230.357	85.256	–305.829	112.662	195.433	–6.380

References

Phase	H / S	C _p
GAS	Tk1	e

502.463

ANTIMONY TRIIODIDE

SbI3

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	98.074	218.907	218.907	–100.416	0.000	–165.683	–100.416	–100.169	17.549
	300.00	98.225	219.514	218.909	–100.234	0.182	–166.089	–100.432	–100.168	17.441
	400.00	106.548	248.906	222.860	–89.998	10.418	–189.560	–125.217	–99.122	12.944
	444.00	110.265	260.216	226.008	–85.228	15.188	–200.764	–126.918	–96.160	11.313
			51.358		22.803					
LIQ	444.00	143.992	311.574	226.008	–62.425	37.991	–200.764	–104.115	–96.160	11.313
	500.00	143.992	328.678	236.568	–54.361	46.055	–218.700	–164.491	–89.448	9.345
	600.00	143.992	354.930	254.174	–39.962	60.454	–252.920	–158.397	–75.014	6.531
	666.00	143.992	369.957	264.916	–30.459	69.957	–276.850	–154.427	–66.053	5.181

References

Phase	H / S	C _p	Remarks
SOL	Pa2	Pa2	
LIQ	Pa2	Pa2	Pa2 BPT= 666., L= 67.438 kJ

SbI3[g]

ANTIMONY TRIIODIDE (GAS)

502.463

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	81.757	404.995	404.995	6.694	0.000	-114.055	6.694	-48.541	8.504
	300.00	81.773	405.501	404.997	6.845	0.151	-114.805	6.647	-48.884	8.511
	400.00	82.355	429.117	408.213	15.056	8.362	-156.591	-20.163	-66.153	8.639
	500.00	82.630	447.527	414.302	23.306	16.612	-200.457	-86.823	-71.205	7.439
	600.00	82.785	462.607	421.134	31.578	24.884	-245.986	-86.857	-68.080	5.927
	700.00	82.883	475.376	427.994	39.861	33.167	-292.902	-86.976	-64.942	4.846
	800.00	82.951	486.448	434.624	48.153	41.459	-341.005	-87.211	-61.780	4.034
	900.00	83.001	496.221	440.936	56.451	49.757	-390.148	-87.592	-58.580	3.400
	1000.00	83.040	504.968	446.909	64.753	58.059	-440.215	-107.982	-53.218	2.780
	1100.00	83.072	512.884	452.553	73.059	66.365	-491.114	-108.506	-47.717	2.266
	1200.00	83.099	520.114	457.886	81.367	74.673	-542.769	-109.038	-42.167	1.835
	1300.00	83.123	526.766	462.932	89.678	82.984	-595.118	-109.576	-36.573	1.470
	1400.00	83.144	532.927	467.714	97.992	91.298	-648.106	-110.122	-30.936	1.154
	1500.00	83.164	538.664	472.255	106.307	99.613	-701.689	-110.674	-25.261	0.880

References

Phase	H / S	C _p
GAS	Pa2	Pa2

SbO[g]

ANTIMONY OXIDE (GAS)

137.749

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	31.827	238.346	238.346	-103.500	0.000	-174.563	-103.500	-130.408	22.847
	300.00	31.890	238.543	238.347	-103.441	0.059	-175.004	-103.515	-130.575	22.735
	400.00	34.255	248.083	239.631	-100.119	3.381	-199.352	-104.242	-139.482	18.214
	500.00	35.539	255.876	242.125	-96.624	6.876	-224.563	-104.896	-148.216	15.484
	600.00	36.397	262.436	244.978	-93.025	10.475	-250.487	-105.555	-156.818	13.652
	700.00	37.053	268.097	247.886	-89.352	14.148	-277.020	-106.268	-165.307	12.335
	800.00	37.603	273.082	250.730	-85.618	17.882	-304.084	-107.071	-173.687	11.341
	900.00	38.090	277.539	253.465	-81.833	21.667	-331.619	-107.998	-181.960	10.561
	1000.00	38.539	281.576	256.078	-78.002	25.498	-359.578	-128.907	-188.012	9.821
	1100.00	38.962	285.269	258.566	-74.126	29.374	-387.923	-129.925	-193.873	9.206
	1200.00	39.368	288.677	260.935	-70.210	33.290	-416.622	-130.921	-199.642	8.690
	1300.00	39.762	291.844	263.192	-66.253	37.247	-445.650	-131.894	-205.330	8.250
	1400.00	40.148	294.805	265.346	-62.257	41.243	-474.984	-132.843	-210.943	7.870
	1500.00	40.526	297.587	267.403	-58.224	45.276	-504.605	-133.767	-216.489	7.539
	1600.00	40.900	300.215	269.373	-54.152	49.348	-534.496	-134.668	-221.974	7.247
	1700.00	41.270	302.706	271.261	-50.044	53.456	-564.643	-135.543	-227.404	6.987
	1800.00	41.637	305.075	273.074	-45.899	57.601	-595.033	-136.394	-232.783	6.755
	1900.00	42.001	307.336	274.818	-41.717	61.783	-625.655	-214.850	-237.832	6.538
	2000.00	42.364	309.499	276.499	-37.498	66.002	-656.497	-214.382	-239.054	6.243

References

Phase	H / S	C _p
GAS	Tk1	Tk1,e

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
SOL—A	298.15	111.758	110.449	110.449	-720.305	0.000	-753.235	-720.305	-634.344	111.134
	300.00	111.880	111.141	110.451	-720.098	0.207	-753.440	-720.273	-633.811	110.356
	400.00	118.491	144.232	114.919	-708.580	11.725	-766.272	-718.338	-605.270	79.040
	500.00	125.102	171.383	123.573	-696.400	23.905	-782.091	-715.986	-577.267	60.307
	600.00	131.712	194.776	133.533	-683.559	36.746	-800.425	-713.241	-549.774	47.862
	700.00	138.323	215.576	143.794	-670.057	50.248	-820.961	-710.139	-522.770	39.010
	800.00	144.934	234.478	153.965	-655.895	64.410	-843.477	-706.718	-496.233	32.401
	879.00	150.156	248.369	161.831	-644.239	76.066	-862.555	-703.818	-475.585	28.262
SOL—B			7.615		6.694					
	879.00	119.587	255.984	161.831	-637.545	82.760	-862.555	-697.124	-475.585	28.262
	900.00	119.841	258.811	164.061	-635.031	85.274	-867.960	-696.981	-470.294	27.295
LIQ	928.00	120.173	262.487	166.976	-631.670	88.635	-875.259	-736.568	-462.189	26.015
			59.289		55.020					
	928.00	156.900	321.776	166.976	-576.650	143.655	-875.259	-681.548	-462.189	26.015
	1000.00	156.900	333.500	178.549	-565.354	154.951	-898.854	-678.517	-445.285	23.259
	1100.00	156.900	348.454	193.326	-549.664	170.641	-932.963	-674.367	-422.163	20.047
	1200.00	156.900	362.107	206.830	-533.974	186.331	-968.501	-670.276	-399.417	17.386
	1300.00	156.900	374.665	219.264	-518.284	202.021	-1005.348	-666.237	-377.009	15.148
	1400.00	156.900	386.293	230.785	-502.594	217.711	-1043.403	-662.243	-354.911	13.242
	1500.00	156.900	397.118	241.517	-486.904	233.401	-1082.580	-658.290	-333.097	11.599
	1600.00	156.900	407.244	251.562	-471.214	249.091	-1122.804	-654.377	-311.545	10.171
	1700.00	156.900	416.756	261.002	-455.524	264.781	-1164.008	-650.501	-290.237	8.918
	1729.00	156.900	419.410	263.637	-450.973	269.332	-1176.133	-649.384	-284.101	8.583

References

Phase	H / S	C _p	Remarks
SOL—A	Nb1	e	cubic
SOL—B	Tk1	Pa1	
LIQ	Tk1	e	Tk1 NBPT= 1729. GAS (Sb4O6)

Sb2O3[O]**DIANTIMONY TRIOXIDE (ORTHORHOMBIC)**

291.498

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	101.381	123.001	123.001	-708.552	0.000	-745.225	-708.552	-626.333	109.731
	300.00	101.582	123.629	123.003	-708.364	0.188	-745.453	-708.539	-625.823	108.965
	400.00	108.944	153.995	127.093	-697.791	10.761	-759.389	-707.550	-598.387	78.141
	500.00	112.799	178.757	135.028	-686.687	21.865	-776.066	-706.273	-571.241	59.677
	600.00	115.273	199.555	144.095	-675.276	33.276	-795.009	-704.958	-544.359	47.391
	700.00	117.095	217.467	153.327	-663.654	44.898	-815.881	-703.736	-517.691	38.631
	800.00	118.569	233.202	162.348	-651.869	56.683	-838.430	-702.692	-491.187	32.071
	900.00	119.841	247.242	171.015	-639.947	68.605	-862.465	-701.897	-464.799	26.976
	928.00	120.173	250.919	173.370	-636.587	71.965	-869.440	-741.485	-456.370	25.688

References

Phase	H / S	C _p	Remarks
SOL	Nb1	Pa1	Pa1 TPT(cub. - orthorh.)= 879., L= 4. kJ / MPT= 928.

Sb2O4**DIANTIMONY TETRAOXIDE**

307.498

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	114.558	126.984	126.984	-907.510	0.000	-945.370	-907.510	-795.897	139.438
	300.00	114.801	127.694	126.987	-907.298	0.212	-945.606	-907.500	-795.204	138.457
	400.00	123.588	162.091	131.617	-895.320	12.190	-960.157	-906.591	-757.893	98.971
	500.00	128.009	190.190	140.610	-882.720	24.790	-977.815	-905.348	-720.859	75.308
	600.00	130.714	213.785	150.892	-869.774	37.736	-998.045	-904.078	-684.082	59.555
	700.00	132.606	234.084	161.361	-856.603	50.907	-1020.462	-902.935	-647.508	48.318
	800.00	134.067	251.890	171.587	-843.267	64.243	-1044.779	-902.008	-611.085	39.900
	900.00	135.276	267.753	181.406	-829.798	77.712	-1070.776	-901.369	-574.762	33.358
	1000.00	136.329	282.061	190.768	-816.217	91.293	-1098.278	-940.732	-534.272	27.907
	1100.00	137.281	295.100	199.669	-802.536	104.974	-1127.146	-940.345	-493.644	23.441
	1200.00	138.162	307.083	208.127	-788.763	118.747	-1157.263	-939.946	-453.053	19.721

References

Phase	H / S	C _p
SOL	Pa1	Pa1

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
SOL	298.15	117.589	125.102	125.102	-971.901	0.000	-1009.200	-971.901	-829.144	145.263
	300.00	117.860	125.830	125.104	-971.683	0.218	-1009.432	-971.912	-828.258	144.213
	400.00	127.264	161.225	129.866	-959.357	12.544	-1023.847	-972.141	-780.322	101.900
	500.00	131.416	190.126	139.120	-946.398	25.503	-1041.461	-972.068	-732.374	76.511
	600.00	133.501	214.290	149.690	-933.141	38.760	-1061.715	-972.067	-684.438	59.586
	700.00	134.610	234.962	160.431	-919.730	52.171	-1084.203	-972.310	-636.485	47.495

References

Phase	H / S	C _p	Remarks
SOL	Nb1,Tk1	Pa1	

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
GAS	298.15	182.756	444.199	444.199	-1215.536	0.000	-1347.974	-1215.536	-1110.191	194.501
	300.00	183.263	445.331	444.203	-1215.197	0.339	-1348.797	-1215.547	-1109.537	193.188
	400.00	201.563	500.907	451.656	-1195.835	19.701	-1396.198	-1215.352	-1074.193	140.275
	500.00	210.792	546.973	466.250	-1175.174	40.362	-1448.661	-1214.346	-1039.011	108.545
	600.00	216.449	585.940	483.035	-1153.793	61.743	-1505.357	-1213.157	-1004.056	87.411
	700.00	220.420	619.619	500.196	-1131.940	83.596	-1565.673	-1212.103	-969.293	72.330
	800.00	223.493	649.260	517.013	-1109.738	105.798	-1629.147	-1211.385	-934.660	61.027
	900.00	226.043	675.735	533.204	-1087.258	128.278	-1695.420	-1211.158	-900.088	52.240
	1000.00	228.269	699.669	548.673	-1064.541	150.995	-1764.209	-1290.867	-857.071	44.769

References

Phase	H / S	C _p
GAS	Pa1	Pa1

SbOCl

ANTIMONY CHLORIDE OXIDE

173.202

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
							kJ / mol			
SOL	298.15	74.539	107.529	107.529	-374.050	0.000	-406.110	-374.050	-328.694	57.586
	300.00	74.580	107.990	107.530	-373.912	0.138	-406.309	-374.017	-328.413	57.182
	400.00	76.776	129.746	110.482	-366.344	7.706	-418.243	-372.232	-313.479	40.936
	500.00	78.973	147.114	116.128	-358.557	15.493	-432.114	-370.379	-299.003	31.237
	600.00	81.170	161.707	122.540	-350.550	23.500	-447.574	-368.448	-284.908	24.803
	700.00	83.366	174.384	129.060	-342.323	31.727	-464.392	-366.446	-271.142	20.233
	800.00	85.563	185.660	135.443	-333.876	40.174	-482.404	-364.388	-257.668	16.824

References

Phase	H / S	C _p
SOL	Nb1/e	e

SbS[g]

ANTIMONY SULFIDE (GAS)

217.948

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
							kJ / mol			
GAS	298.15	34.664	249.709	249.709	-185.770	0.000	-260.221	-185.770	-217.976	38.188
	300.00	34.700	249.924	249.710	-185.706	0.064	-260.683	-185.879	-218.176	37.988
	400.00	35.867	260.091	251.088	-182.169	3.601	-286.205	-198.649	-227.764	29.743
	500.00	36.672	268.181	253.725	-178.542	7.228	-312.633	-209.348	-233.873	24.433
	600.00	37.488	274.939	256.713	-174.834	10.936	-339.798	-219.047	-237.842	20.706
	700.00	38.287	280.779	259.743	-171.045	14.725	-367.590	-227.945	-240.269	17.929
	800.00	39.021	285.940	262.701	-167.179	18.591	-395.931	-237.027	-241.415	15.763
	900.00	39.661	290.574	265.545	-163.244	22.526	-424.760	-404.721	-237.946	13.810
	1000.00	40.195	294.781	268.261	-159.250	26.520	-454.031	-429.242	-217.055	11.338
	1100.00	40.621	298.633	270.850	-155.208	30.562	-483.705	-433.866	-195.613	9.289
	1200.00	40.943	302.182	273.315	-151.129	34.641	-513.748	-438.470	-173.750	7.563
	1300.00	41.171	305.469	275.664	-147.023	38.747	-544.133	-443.063	-151.504	6.087
	1400.00	41.316	308.526	277.903	-142.898	42.872	-574.834	-447.654	-128.904	4.809
	1500.00	41.393	311.379	280.041	-138.762	47.008	-605.831	-452.247	-105.976	3.690
	1600.00	41.415	314.052	282.084	-134.621	51.149	-637.104	-456.849	-82.741	2.701
	1700.00	41.399	316.562	284.039	-130.480	55.290	-668.636	-461.464	-59.218	1.820
	1800.00	41.361	318.927	285.912	-126.342	59.428	-700.412	-466.093	-35.423	1.028
	1900.00	41.318	321.163	287.709	-122.208	63.562	-732.417	-548.369	-11.087	0.305
	2000.00	41.287	323.281	289.435	-118.078	67.692	-764.640	-551.762	17.278	-0.451

References

Phase	H / S	C _p
GAS	Pa3	Pa3

339.698

DIANTIMONY TRISULFIDE (BLACK)

Sb2S3

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	119.820	182.171	182.171	-141.796	0.000	-196.110	-141.796	-140.293	24.579
	300.00	119.926	182.913	182.174	-141.574	0.222	-196.448	-141.794	-140.284	24.426
	400.00	124.005	218.019	186.933	-129.362	12.434	-216.569	-148.452	-139.519	18.219
	500.00	127.565	246.068	196.046	-116.785	25.011	-239.819	-152.821	-136.844	14.296
	600.00	131.419	269.662	206.399	-103.838	37.958	-265.635	-155.959	-133.325	11.607
	700.00	135.492	290.224	216.936	-90.494	51.302	-293.651	-158.061	-129.380	9.654
	800.00	139.657	308.588	227.264	-76.737	65.059	-323.607	-160.120	-125.146	8.171
	823.00	140.618	312.560	229.593	-73.514	68.282	-330.751	-160.654	-124.133	7.879
LIQ			49.384		40.643					
	823.00	200.862	361.944	229.593	-32.871	108.925	-330.751	-120.011	-124.133	7.879
	900.00	192.804	379.554	241.686	-17.715	124.081	-359.313	-275.736	-121.188	7.034
	1000.00	182.339	399.326	256.488	1.043	142.839	-398.284	-308.504	-100.180	5.233

References

Phase	H / S	C _p
SOL	Pa3	Pa3
LIQ	Pa3	Pa3

339.698

DIANTIMONY TRISULFIDE (GAS)

Sb2S3[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	99.532	409.811	409.811	-119.660	0.000	-241.845	-119.660	-186.028	32.591
	300.00	99.623	410.427	409.813	-119.476	0.184	-242.604	-119.696	-186.440	32.462
	400.00	103.005	439.610	413.769	-109.324	10.336	-285.167	-128.414	-208.117	27.177
	500.00	104.722	462.799	421.336	-98.929	20.731	-330.328	-134.965	-227.353	23.751
	600.00	105.704	481.986	429.891	-88.403	31.257	-377.595	-140.524	-245.284	21.354
	700.00	106.317	498.330	438.530	-77.800	41.860	-426.631	-145.367	-262.360	19.578
	800.00	106.723	512.555	446.913	-67.147	52.513	-477.190	-150.530	-278.729	18.199
	900.00	107.006	525.142	454.919	-56.459	63.201	-529.087	-314.480	-290.962	16.887
	1000.00	107.210	536.427	462.515	-45.748	73.912	-582.175	-355.295	-284.071	14.838
	1100.00	107.362	546.653	469.707	-35.019	84.641	-636.337	-356.369	-276.897	13.149
	1200.00	107.477	556.000	476.514	-24.277	95.383	-691.477	-357.448	-269.625	11.736
	1300.00	107.567	564.606	482.964	-13.524	106.136	-747.513	-358.533	-262.262	10.538
	1400.00	107.639	572.581	489.084	-2.764	116.896	-804.377	-359.626	-254.816	9.507
	1500.00	107.696	580.009	494.900	8.003	127.663	-862.011	-360.727	-247.291	8.611
	1600.00	107.742	586.961	500.439	18.775	138.435	-920.363	-361.835	-239.692	7.825
	1700.00	107.780	593.494	505.723	29.551	149.211	-979.389	-362.953	-232.024	7.129
	1800.00	107.811	599.656	510.772	40.331	159.991	-1039.049	-364.079	-224.290	6.509

References

Phase	H / S	C _p
GAS	Pa3	Pa3

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol)]					[————— kJ / mol]			[-]
GAS	298.15	122.707	432.241	432.241	-93.722	0.000	-222.595	-93.722	-157.220	27.544
	300.00	122.818	433.001	432.244	-93.495	0.227	-223.395	-93.757	-157.614	27.443
	400.00	126.934	468.971	437.120	-80.982	12.740	-268.570	-104.695	-178.242	23.276
	500.00	129.007	497.542	446.446	-68.174	25.548	-316.945	-112.736	-195.789	20.454
	600.00	130.187	521.176	456.988	-55.209	38.513	-367.915	-119.431	-211.738	18.433
	700.00	130.921	541.304	467.631	-42.151	51.571	-421.064	-125.130	-226.669	16.914
	800.00	131.407	558.820	477.959	-29.033	64.689	-476.089	-131.187	-240.771	15.721
	900.00	131.744	574.318	487.821	-15.875	77.847	-532.761	-348.873	-249.468	14.479
	1000.00	131.988	588.212	497.177	-2.687	91.035	-590.899	-389.047	-234.179	12.232
	1100.00	132.168	600.800	506.034	10.521	104.243	-650.360	-389.484	-218.671	10.384
	1200.00	132.306	612.307	514.418	23.745	117.467	-711.023	-389.929	-203.123	8.842
	1300.00	132.413	622.901	522.360	36.981	130.703	-772.791	-390.385	-187.537	7.535
	1400.00	132.497	632.717	529.897	50.227	143.949	-835.577	-390.852	-171.916	6.414
	1500.00	132.564	641.861	537.060	63.480	157.202	-899.312	-391.330	-156.261	5.442
	1600.00	132.619	650.418	543.880	76.739	170.461	-963.930	-391.820	-140.574	4.589
	1700.00	132.664	658.460	550.386	90.003	183.725	-1029.378	-392.322	-124.856	3.836
	1800.00	132.701	666.044	556.603	103.272	196.994	-1095.607	-392.836	-109.108	3.166

References

Phase	H / S	C _p
GAS	Pa3	Pa3

429.382

TRIAMTIMONY DISULFIDE (GAS)

Sb3S2[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
GAS	298.15	98.160	406.380	406.380	28.828	0.000	-92.334	28.828	-32.502	5.694
	300.00	98.266	406.988	406.382	29.010	0.182	-93.087	28.785	-32.883	5.725
	400.00	102.219	435.869	410.293	39.059	10.231	-135.289	21.982	-52.907	6.909
	500.00	104.212	458.915	417.791	49.390	20.562	-180.068	16.650	-71.058	7.423
	600.00	105.348	478.025	426.283	59.873	31.045	-226.942	11.946	-88.142	7.673
	700.00	106.055	494.321	434.867	70.446	41.618	-275.579	7.623	-104.483	7.797
	800.00	106.523	508.516	443.205	81.076	52.248	-325.736	2.929	-120.185	7.847
	900.00	106.848	521.082	451.173	91.746	62.918	-377.228	-107.842	-132.961	7.717
	1000.00	107.083	532.352	458.738	102.443	73.615	-429.910	-169.846	-129.293	6.754
	1100.00	107.257	542.567	465.901	113.160	84.332	-483.663	-172.227	-125.123	5.942
	1200.00	107.389	551.906	472.685	123.893	95.065	-538.394	-174.605	-120.735	5.255
	1300.00	107.492	560.505	479.114	134.637	105.809	-594.020	-176.983	-116.150	4.667
	1400.00	107.573	568.475	485.216	145.391	116.563	-650.474	-179.362	-111.381	4.156
	1500.00	107.638	575.899	491.017	156.151	127.323	-707.697	-181.743	-106.442	3.707
	1600.00	107.691	582.847	496.541	166.918	138.090	-765.638	-184.127	-101.344	3.309
	1700.00	107.734	589.377	501.812	177.689	148.861	-824.252	-186.514	-96.098	2.953
	1800.00	107.769	595.536	506.849	188.464	159.636	-883.501	-188.906	-90.710	2.632

References

Phase	H / S	C _p
GAS	Pa3	Pa3

Sb4S3[g]

TETRAANTIMONY TRISULFIDE (GAS)

583.198

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		[————— J / (K mol) —————]		[—————]		[————— kJ / mol —————]				[-]
GAS	298.15	147.581	483.215	483.215	-35.418	0.000	-179.489	-35.418	-96.527	16.911
	300.00	147.700	484.128	483.218	-35.145	0.273	-180.383	-35.458	-96.906	16.873
	400.00	151.991	527.289	489.073	-20.132	15.286	-231.047	-44.442	-116.779	15.250
	500.00	154.075	561.453	500.252	-4.818	30.600	-285.544	-51.313	-134.138	14.013
	600.00	155.239	589.656	512.871	10.653	46.071	-343.141	-57.284	-150.119	13.069
	700.00	155.953	613.644	525.596	26.215	61.633	-403.335	-62.686	-165.166	12.325
	800.00	156.422	634.502	537.934	41.836	77.254	-465.765	-68.618	-179.412	11.714
	900.00	156.747	652.945	549.708	57.495	92.913	-530.156	-233.614	-189.410	10.993
	1000.00	156.979	669.473	560.873	73.182	108.600	-596.291	-315.474	-175.930	9.190
	1100.00	157.152	684.443	571.437	88.889	124.307	-663.998	-317.846	-161.861	7.686
	1200.00	157.283	698.123	581.432	104.611	140.029	-733.136	-320.221	-147.576	6.424
	1300.00	157.385	710.717	590.899	120.345	155.763	-803.587	-322.601	-133.092	5.348
	1400.00	157.466	722.383	599.879	136.088	171.506	-875.249	-324.988	-118.425	4.418
	1500.00	157.531	733.249	608.412	151.837	187.255	-948.037	-327.381	-103.587	3.607
	1600.00	157.583	743.418	616.536	167.593	203.011	-1021.876	-329.782	-88.589	2.892
	1700.00	157.627	752.973	624.283	183.354	218.772	-1096.700	-332.191	-73.441	2.257
	1800.00	157.662	761.984	631.686	199.118	234.536	-1172.452	-334.609	-58.151	1.687

References

Phase	H / S	C _p
GAS	Pa3	Pa3

Sb2(SO4)3

DIANTIMONY TRISULFATE

531.691

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		[————— J / (K mol) —————]		[—————]		[————— kJ / mol —————]				[-]
SOL	298.15	275.466	291.206	291.206	-2402.499	0.000	-2489.322	-2402.499	-2066.518	362.045
	300.00	275.809	292.911	291.212	-2401.989	0.510	-2489.862	-2402.535	-2064.433	359.450
	400.00	294.386	374.801	302.252	-2373.479	29.020	-2523.400	-2410.722	-1951.212	254.802
	500.00	312.963	442.487	323.713	-2343.112	59.387	-2564.355	-2415.654	-1835.808	191.786
	600.00	331.540	501.189	348.502	-2310.887	91.612	-2611.600	-2418.471	-1719.531	149.698
	700.00	350.117	553.691	374.127	-2276.804	125.695	-2664.388	-2419.363	-1602.952	119.614
	800.00	368.694	601.656	399.611	-2240.863	161.636	-2722.188	-2419.259	-1486.320	97.047
	900.00	387.271	646.154	424.561	-2203.065	199.434	-2784.604	-2576.531	-1366.297	79.298
	1000.00	405.848	687.919	448.829	-2163.409	239.090	-2851.328	-2609.173	-1227.973	64.143

References

Phase	H / S	C _p
SOL	Nb1,e	e

200.710

ANTIMONY SELENIDE (GAS)

SbSe[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	36.704	255.877	255.877	212.129	0.000	135.839	212.129	162.011	-28.384
	300.00	36.706	256.104	255.878	212.197	0.068	135.366	212.103	161.700	-28.154
	400.00	36.823	266.680	257.319	215.873	3.744	109.201	210.549	145.125	-18.951
	500.00	36.941	274.910	260.045	219.562	7.433	82.107	202.807	129.060	-13.483
	600.00	37.058	281.655	263.101	223.261	11.132	54.268	200.314	114.544	-9.972
	700.00	37.175	287.376	266.170	226.973	14.844	25.810	197.752	100.451	-7.496
	800.00	37.292	292.348	269.139	230.696	18.567	-3.182	195.093	86.730	-5.663
	900.00	37.409	296.747	271.967	234.432	22.303	-32.641	192.304	73.351	-4.257
	1000.00	37.526	300.695	274.645	238.178	26.049	-62.516	169.526	62.400	-3.259
	1100.00	37.643	304.277	277.179	241.937	29.808	-92.768	113.320	56.782	-2.696
	1200.00	37.761	307.557	279.576	245.707	33.578	-123.362	111.885	51.706	-2.251
	1300.00	37.878	310.584	281.846	249.489	37.360	-154.271	110.473	46.748	-1.878
	1400.00	37.995	313.396	284.000	253.283	41.154	-185.471	109.085	41.899	-1.563
	1500.00	38.112	316.021	286.048	257.088	44.959	-216.944	107.720	37.147	-1.294
	1600.00	38.229	318.484	288.000	260.905	48.776	-248.670	106.380	32.486	-1.061
	1700.00	38.346	320.806	289.862	264.734	52.605	-280.636	105.065	27.908	-0.858
	1800.00	38.464	323.001	291.642	268.574	56.445	-312.827	103.774	23.407	-0.679
	1900.00	38.581	325.083	293.348	272.426	60.297	-345.232	102.487	19.260	-0.529
	2000.00	38.698	327.065	294.985	276.290	64.161	-377.840	101.249	15.964	-0.495

References

Phase	H / S	C _p
GAS	Mi1	Mi1

480.380

DIANTIMONY TRISELENIDE

Sb2Se3

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	124.979	212.129	212.129	-127.612	0.000	-190.858	-127.612	-125.915	22.060
	300.00	125.018	212.902	212.131	-127.381	0.231	-191.251	-127.615	-125.905	21.922
	400.00	127.110	249.154	217.060	-114.774	12.838	-214.436	-128.138	-125.275	16.359
	500.00	129.202	277.742	226.436	-101.959	25.653	-240.830	-146.993	-124.185	12.974
	600.00	131.294	301.484	237.020	-88.934	38.678	-269.824	-149.869	-119.353	10.391
	700.00	133.386	321.880	247.720	-75.700	51.912	-301.016	-152.696	-114.043	8.510
	800.00	135.478	339.828	258.134	-62.257	65.355	-334.119	-155.533	-108.328	7.073
	888.00	137.319	354.060	266.945	-50.254	77.358	-364.659	-158.087	-103.000	6.059
			60.545		53.764					
LIQ	888.00	171.544	414.605	266.945	3.510	131.122	-364.659	-104.323	-103.000	6.059
	900.00	171.544	416.908	268.929	5.569	133.181	-369.649	-104.269	-102.983	5.977
	1000.00	171.544	434.982	284.647	22.723	150.335	-412.259	-143.679	-98.637	5.152

References

Phase	H / S	C _p
SOL	Mi1	Mi1
LIQ	Mi1	Mi1

Sb2Te3

DIANTIMONY TRITELLURIDE

626.300

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	128.727	246.438	246.438	-56.484	0.000	-129.959	-56.484	-58.542	10.256
	300.00	128.825	247.234	246.440	-56.246	0.238	-130.416	-56.482	-58.555	10.195
	400.00	134.139	285.023	251.557	-43.098	13.386	-157.107	-56.516	-59.248	7.737
	500.00	139.453	315.526	261.394	-29.418	27.066	-187.181	-56.794	-59.904	6.258
	600.00	144.766	341.421	272.626	-15.207	41.277	-220.059	-57.322	-60.481	5.265
	700.00	150.080	364.136	284.108	-0.465	56.019	-255.360	-58.141	-60.947	4.548
	800.00	155.394	384.523	295.407	14.809	71.293	-292.809	-112.176	-55.633	3.632
	892.00	160.282	401.699	305.495	29.330	85.814	-328.986	-113.573	-49.051	2.872
LIQ			110.933		98.952					
	892.00	196.648	512.632	305.495	128.282	184.766	-328.986	-14.621	-49.051	2.872
	900.00	196.648	514.388	307.344	129.855	186.339	-333.094	-14.445	-49.360	2.865
	1000.00	196.648	535.107	329.103	149.520	206.004	-385.587	-52.097	-49.131	2.566

References

Phase	H / S	C _p
SOL	Mi1	Mi1
LIQ	Mi1	Mi1

SbZn

ANTIMONY ZINC

187.140

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	49.850	83.082	83.082	-18.933	0.000	-43.704	-18.933	-17.719	3.104
	300.00	49.882	83.390	83.083	-18.841	0.092	-43.858	-18.934	-17.712	3.084
	400.00	51.614	97.977	85.060	-13.766	5.167	-52.957	-19.004	-17.293	2.258
	500.00	53.346	109.681	88.851	-8.518	10.415	-63.358	-19.054	-16.859	1.761
	600.00	55.078	119.560	93.166	-3.097	15.836	-74.833	-19.100	-16.416	1.429
	700.00	56.810	128.180	97.565	2.498	21.431	-87.229	-26.506	-15.886	1.185
	800.00	58.543	135.880	101.882	8.265	27.198	-100.438	-26.745	-14.352	0.937

References

Phase	H / S	C _p
SOL	Hu1,e	e

44.956

SCANDIUM

Sc

Phase	T [K]	C _p [————— J / (K mol)	S J / (K mol)	-(G-H298)/T [—————]	H [—————	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————	ΔG _f kJ / mol	log K _f [-]
SOL-A	298.15	25.569	34.644	34.644	0.000	0.000	-10.329	0.000	0.000	0.000
	300.00	25.581	34.802	34.644	0.047	0.047	-10.393	0.000	0.000	0.000
	400.00	26.224	42.249	35.655	2.638	2.638	-14.262	0.000	0.000	0.000
	500.00	26.868	48.170	37.586	5.292	5.292	-18.793	0.000	0.000	0.000
	600.00	27.475	53.116	39.773	8.006	8.006	-23.864	0.000	0.000	0.000
	700.00	28.246	57.408	41.992	10.791	10.791	-29.394	0.000	0.000	0.000
	800.00	29.128	61.236	44.162	13.659	13.659	-35.330	0.000	0.000	0.000
	900.00	30.117	64.723	46.256	16.620	16.620	-41.630	0.000	0.000	0.000
	1000.00	31.211	67.952	48.266	19.686	19.686	-48.266	0.000	0.000	0.000
	1100.00	32.409	70.982	50.195	22.866	22.866	-55.214	0.000	0.000	0.000
	1200.00	33.709	73.857	52.048	26.171	26.171	-62.457	0.000	0.000	0.000
	1300.00	35.113	76.610	53.832	29.611	29.611	-69.981	0.000	0.000	0.000
	1400.00	36.618	79.266	55.554	33.197	33.197	-77.776	0.000	0.000	0.000
	1500.00	38.226	81.847	57.221	36.938	36.938	-85.832	0.000	0.000	0.000
	1600.00	39.936	84.368	58.839	40.846	40.846	-94.143	0.000	0.000	0.000
	1608.00	40.077	84.568	58.967	41.166	41.166	-94.819	0.000	0.000	0.000
SOL-B			2.493		4.008					
	1608.00	44.225	87.060	58.967	45.174	45.174	-94.819	0.000	0.000	0.000
	1700.00	44.225	89.521	60.555	49.242	49.242	-102.943	0.000	0.000	0.000
	1800.00	44.225	92.049	62.235	53.665	53.665	-112.022	0.000	0.000	0.000
	1812.00	44.225	92.342	62.433	54.196	54.196	-113.129	0.000	0.000	0.000
LIQ			7.779		14.096					
	1812.00	44.225	100.122	62.433	68.292	68.292	-113.129	0.000	0.000	0.000
	1900.00	44.225	102.219	64.228	72.183	72.183	-122.032	0.000	0.000	0.000
	2000.00	44.225	104.487	66.184	76.606	76.606	-132.369	0.000	0.000	0.000
	2100.00	44.225	106.645	68.060	81.028	81.028	-142.926	0.000	0.000	0.000
	2200.00	44.225	108.702	69.861	85.451	85.451	-153.694	0.000	0.000	0.000
	2300.00	44.225	110.668	71.593	89.873	89.873	-164.664	0.000	0.000	0.000
	2400.00	44.225	112.550	73.261	94.296	94.296	-175.825	0.000	0.000	0.000
	2500.00	44.225	114.356	74.868	98.718	98.718	-187.171	0.000	0.000	0.000
	2600.00	44.225	116.090	76.421	103.141	103.141	-198.694	0.000	0.000	0.000
	2700.00	44.225	117.759	77.921	107.563	107.563	-210.387	0.000	0.000	0.000
	2800.00	44.225	119.368	79.373	111.986	111.986	-222.244	0.000	0.000	0.000
	2900.00	44.225	120.920	80.779	116.408	116.408	-234.259	0.000	0.000	0.000
	3000.00	44.225	122.419	82.142	120.831	120.831	-246.426	0.000	0.000	0.000
	3100.00	44.225	123.869	83.465	125.253	125.253	-258.741	0.000	0.000	0.000
	3101.00	44.225	123.883	83.478	125.298	125.298	-258.865	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL-A	Hu1	Hu1	
SOL-B	Hu1	Hu1	
LIQ	Hu1	Hu1	Hu1 BPT= 3101., L= 314.16 kJ

Phase	T [K]	C_p	S	$-(G-H_{298})/T$	H	$H-H_{298}$	G	ΔH_f	ΔG_f	$\log K_f$
		[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{J}}{\text{K mol}}$]
GAS	298.15	22.101	174.783	174.783	377.899	0.000	325.787	377.899	336.116	-58.886
	300.00	22.086	174.920	174.784	377.940	0.041	325.464	377.893	335.857	-58.478
	400.00	21.535	181.187	175.642	380.117	2.218	307.642	377.479	321.904	-42.036
	500.00	21.273	185.961	177.247	382.256	4.357	289.276	376.964	308.068	-32.184
	600.00	21.126	189.826	179.031	384.375	6.476	270.480	376.369	294.344	-25.625
	700.00	21.035	193.075	180.812	386.483	8.584	251.331	375.692	280.725	-20.948
	800.00	20.975	195.880	182.524	388.584	10.685	231.880	374.924	267.210	-17.447
	900.00	20.934	198.348	184.148	390.679	12.780	212.166	374.058	253.796	-14.730
	1000.00	20.906	200.552	185.680	392.771	14.872	192.219	373.085	240.485	-12.562
	1100.00	20.887	202.543	187.124	394.860	16.961	172.063	371.994	227.277	-10.792
	1200.00	20.875	204.360	188.486	396.948	19.049	151.716	370.777	214.173	-9.323
	1300.00	20.870	206.031	189.772	399.036	21.137	131.196	369.424	201.177	-8.083
	1400.00	20.903	207.579	190.989	401.125	23.226	110.514	367.927	188.290	-7.025
	1500.00	20.922	209.022	192.144	403.216	25.317	89.683	366.277	175.515	-6.112
	1600.00	20.947	210.373	193.241	405.309	27.410	68.713	364.463	162.856	-5.317
	1700.00	20.993	211.644	194.287	407.406	29.507	47.612	358.163	150.554	-4.626
	1800.00	21.070	212.846	195.285	409.509	31.610	26.387	355.844	138.409	-4.017
	1900.00	21.185	213.988	196.239	411.621	33.722	5.044	339.438	127.077	-3.494
	2000.00	21.343	215.078	197.154	413.747	35.848	-16.409	337.141	115.959	-3.029
	2100.00	21.550	216.124	198.033	415.891	37.992	-37.970	334.863	104.956	-2.611
	2200.00	21.809	217.133	198.878	418.059	40.160	-59.633	332.608	94.062	-2.233
	2300.00	22.123	218.109	199.693	420.255	42.356	-81.395	330.382	83.268	-1.891
	2400.00	22.492	219.058	200.480	422.485	44.586	-103.254	328.189	72.572	-1.579
	2500.00	22.921	219.985	201.242	424.756	46.857	-125.206	326.037	61.965	-1.295
	2600.00	23.408	220.893	201.980	427.071	49.172	-147.250	323.931	51.444	-1.034
	2700.00	23.957	221.786	202.697	429.439	51.540	-169.384	321.876	41.003	-0.793
	2800.00	24.568	222.669	203.395	431.865	53.966	-191.607	319.879	30.637	-0.572
	2900.00	25.241	223.542	204.075	434.355	56.456	-213.917	317.946	20.341	-0.366
	3000.00	25.977	224.410	204.738	436.915	59.016	-236.315	316.084	10.111	-0.176
	3100.00	26.777	225.275	205.387	439.552	61.653	-258.799	314.299	-0.059	0.001
	3200.00	27.641	226.138	206.022	442.273	64.374	-281.370	0.000	0.000	0.000

References

Phase	H / S	C_p
GAS	Hu1	Hu1

183.875

SCANDIUM ARSENATE

ScAsO4

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	119.864	155.896	155.896	-1433.020	0.000	-1479.500	-1433.020	-1336.196	234.096
	300.00	120.175	156.638	155.898	-1432.798	0.222	-1479.789	-1433.000	-1335.596	232.548
	400.00	132.396	193.059	160.781	-1420.109	12.911	-1497.332	-1431.349	-1303.351	170.200
	500.00	140.051	223.474	170.363	-1406.464	26.556	-1518.201	-1429.044	-1271.608	132.844
	600.00	145.908	249.544	181.438	-1392.157	40.863	-1541.883	-1426.392	-1240.366	107.983
	700.00	150.917	272.419	192.834	-1377.311	55.709	-1568.004	-1423.518	-1209.586	90.260
	796.00	155.296	292.094	203.639	-1362.610	70.410	-1595.116	-1420.594	-1180.437	77.462

References

Phase	H / S	C _p
SOL	G1	G1

284.668

SCANDIUM BROMIDE

ScBr3

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	95.349	167.360	167.360	-742.660	0.000	-792.558	-742.660	-714.157	125.117
	300.00	95.395	167.950	167.362	-742.484	0.176	-792.869	-742.741	-713.980	124.315
	400.00	97.906	195.737	171.134	-732.819	9.841	-811.113	-787.389	-695.127	90.774
	500.00	100.416	217.854	178.339	-722.902	19.758	-831.829	-785.666	-672.257	70.230
	600.00	102.926	236.384	186.509	-712.735	29.925	-854.566	-783.790	-649.749	56.566
	700.00	105.437	252.439	194.806	-702.317	40.343	-879.024	-781.760	-627.568	46.830
	800.00	107.947	266.682	202.916	-691.648	51.012	-904.993	-779.580	-605.687	39.547
	900.00	110.458	279.541	210.727	-680.728	61.932	-932.314	-777.258	-584.088	33.900
	1000.00	112.968	291.309	218.205	-669.556	73.104	-960.865	-774.800	-562.756	29.395

References

Phase	H / S	C _p
SOL	Nb1/e	e

ScCl3

SCANDIUM CHLORIDE

151.314

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f kJ / mol	ΔG _f kJ / mol	log K _f [-]
SOL	298.15	91.629	127.194	127.194	-925.082	0.000	-963.005	-925.082	-852.892	149.423
	300.00	91.793	127.761	127.195	-924.912	0.170	-963.241	-925.054	-852.445	148.424
	400.00	97.797	155.103	130.882	-915.394	9.688	-977.435	-923.326	-828.493	108.190
	500.00	100.653	177.269	138.015	-905.455	19.627	-994.089	-921.398	-805.005	84.098
	600.00	102.220	195.769	146.142	-895.305	29.777	-1012.767	-919.416	-781.913	68.072
	700.00	103.538	211.624	154.391	-885.019	40.063	-1033.155	-917.430	-759.152	56.649
	800.00	105.400	225.561	162.433	-874.580	50.502	-1055.028	-915.416	-736.678	48.100
	900.00	108.506	238.139	170.156	-863.897	61.185	-1078.222	-913.284	-714.462	41.466
	1000.00	113.516	249.811	177.544	-852.815	72.267	-1102.626	-910.878	-692.496	36.172
	1100.00	121.070	260.962	184.623	-841.109	83.973	-1128.167	-907.984	-670.793	31.853
	1200.00	131.800	271.931	191.442	-828.495	96.587	-1154.812	-904.320	-649.385	28.267
	1240.00	137.122	276.338	194.109	-823.119	101.963	-1165.777	-902.565	-640.916	26.998
LIQ			54.324		67.362					
	1240.00	143.444	330.662	194.109	-755.757	169.325	-1165.777	-835.203	-640.916	26.998
	1300.00	143.444	337.440	200.569	-747.150	177.932	-1185.822	-832.075	-631.589	25.378
	1400.00	143.444	348.070	210.730	-732.806	192.276	-1220.104	-826.988	-616.359	22.997

References

Phase	H / S	C _p
SOL	Nb1/Pa2	Pa2
LIQ	Dw4	Dw4

101.951

SCANDIUM FLUORIDE

ScF3

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	83.681	97.906	97.906	-1611.677	0.000	-1640.868	-1611.677	-1539.844	269.774
	300.00	83.881	98.424	97.907	-1611.522	0.155	-1641.049	-1611.656	-1539.398	268.033
	400.00	91.046	123.677	101.302	-1602.727	8.950	-1652.198	-1610.272	-1515.509	197.905
	500.00	94.537	144.408	107.914	-1593.430	18.247	-1665.634	-1608.674	-1492.002	155.868
	600.00	96.581	161.839	115.488	-1583.866	27.811	-1680.970	-1607.034	-1468.822	127.872
	700.00	97.943	176.835	123.206	-1574.136	37.541	-1697.921	-1605.414	-1445.915	107.895
	800.00	98.940	189.982	130.748	-1564.290	47.387	-1716.275	-1603.845	-1423.237	92.928
	900.00	99.727	201.682	137.991	-1554.355	57.322	-1735.869	-1602.343	-1400.752	81.298
	1000.00	100.381	212.224	144.896	-1544.349	67.328	-1756.573	-1600.923	-1378.430	72.002
	1100.00	100.950	221.819	151.460	-1534.282	77.395	-1778.283	-1599.595	-1356.246	64.403
	1200.00	101.461	230.625	157.695	-1524.161	87.516	-1800.911	-1598.372	-1334.178	58.075
	1300.00	101.930	238.765	163.622	-1513.991	97.686	-1824.385	-1597.262	-1312.207	52.725
	1400.00	102.369	246.335	169.263	-1503.776	107.901	-1848.645	-1596.277	-1290.318	48.142
	1500.00	102.786	253.412	174.639	-1493.518	118.159	-1873.636	-1595.426	-1268.494	44.173
	1600.00	103.187	260.059	179.772	-1483.219	128.458	-1899.313	-1594.719	-1246.723	40.701
	1700.00	103.574	266.326	184.681	-1472.881	138.796	-1925.635	-1598.480	-1224.752	37.632
	1800.00	103.951	272.257	189.383	-1462.505	149.172	-1952.567	-1598.245	-1202.775	34.904
	1825.00	104.044	273.691	190.528	-1459.905	151.772	-1959.391	-1612.279	-1197.181	34.265
LIQ			34.318		62.630					
	1825.00	88.868	308.009	190.528	-1397.275	214.402	-1959.391	-1549.649	-1197.181	34.265
	1900.00	88.868	311.588	195.237	-1390.609	221.068	-1982.627	-1550.603	-1182.677	32.514
	2000.00	88.868	316.147	201.169	-1381.723	229.954	-2014.016	-1551.887	-1163.279	30.382

References

Phase	H / S	C _p
SOL	Pa2	Pa2
LIQ	Pa2	Pa2

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		[-]
GAS	298.15	67.739	304.579	304.579	-1235.535	0.000	-1326.345	-1235.535	-1225.321	214.671
	300.00	67.894	304.999	304.580	-1235.410	0.125	-1326.909	-1235.544	-1225.258	213.336
	400.00	73.432	325.398	307.324	-1228.305	7.230	-1358.465	-1235.850	-1221.776	159.548
	500.00	76.131	342.104	312.662	-1220.814	14.721	-1391.866	-1236.058	-1218.234	127.268
	600.00	77.713	356.135	318.769	-1213.115	22.420	-1426.797	-1236.283	-1214.649	105.745
	700.00	78.768	368.199	324.989	-1205.288	30.247	-1463.027	-1236.566	-1211.021	90.368
	800.00	79.541	378.770	331.065	-1197.371	38.164	-1500.387	-1236.926	-1207.348	78.832
	900.00	80.151	388.175	336.897	-1189.385	46.150	-1538.743	-1237.373	-1203.625	69.857
	1000.00	80.660	396.647	342.456	-1181.344	54.191	-1577.991	-1237.918	-1199.847	62.674
	1100.00	81.102	404.355	347.738	-1173.256	62.279	-1618.047	-1238.569	-1196.010	56.794
	1200.00	81.499	411.430	352.755	-1165.125	70.410	-1658.841	-1239.336	-1192.108	51.891
	1300.00	81.864	417.968	357.523	-1156.957	78.578	-1700.315	-1240.228	-1188.137	47.740
	1400.00	82.207	424.047	362.060	-1148.753	86.782	-1742.419	-1241.254	-1184.092	44.179
	1500.00	82.532	429.730	366.384	-1140.516	95.019	-1785.111	-1242.424	-1179.969	41.090
	1600.00	82.844	435.066	370.511	-1132.247	103.288	-1828.353	-1243.747	-1175.763	38.385
	1700.00	83.146	440.098	374.458	-1123.948	111.587	-1872.114	-1249.547	-1171.231	35.988
	1800.00	83.440	444.859	378.238	-1115.618	119.917	-1916.364	-1251.359	-1166.572	33.853

References

Phase	H / S	C _p
GAS	Pa2	Pa2

58.963

SCANDIUM NITRIDE

ScN

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	37.082	29.706	29.706	-313.800	0.000	-322.657	-313.800	-283.764	49.714
	300.00	37.219	29.936	29.707	-313.731	0.069	-322.712	-313.806	-283.578	49.375
	400.00	42.237	41.423	31.239	-309.726	4.074	-326.296	-313.850	-273.483	35.713
	500.00	44.852	51.155	34.276	-305.360	8.440	-330.938	-313.608	-263.416	27.519
	600.00	46.521	59.489	37.800	-300.787	13.013	-336.480	-313.240	-253.410	22.061
	700.00	47.744	66.756	41.429	-296.071	17.729	-342.800	-312.830	-243.471	18.168
	800.00	48.728	73.198	45.005	-291.246	22.554	-349.804	-312.428	-233.590	15.252
	900.00	49.574	78.987	48.464	-286.330	27.470	-357.418	-312.061	-223.758	12.987
	1000.00	50.334	84.250	51.784	-281.334	32.466	-365.584	-311.751	-213.964	11.176
	1100.00	51.037	89.081	54.958	-276.265	37.535	-374.254	-311.511	-204.197	9.697
	1200.00	51.703	93.550	57.990	-271.128	42.672	-383.388	-311.353	-194.449	8.464
	1300.00	52.341	97.714	60.887	-265.925	47.875	-392.953	-311.288	-184.711	7.422
	1400.00	52.960	101.616	63.658	-260.660	53.140	-402.922	-311.325	-174.973	6.528
	1500.00	53.564	105.290	66.313	-255.334	58.466	-413.269	-311.475	-165.229	5.754
	1600.00	54.158	108.766	68.858	-249.948	63.852	-423.973	-311.745	-155.471	5.076
	1700.00	54.743	112.067	71.304	-244.502	69.298	-435.016	-316.460	-145.454	4.469
	1800.00	55.321	115.212	73.656	-238.999	74.801	-446.381	-317.153	-135.375	3.928
	1900.00	55.894	118.219	75.923	-233.438	80.362	-458.054	-331.896	-124.573	3.425
	2000.00	56.463	121.100	78.111	-227.821	85.979	-470.021	-332.495	-113.646	2.968

References

Phase	H / S	C _p	Remarks
SOL	Ku1	e	Ku1 MPT= 2923.

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [————— kJ / mol —————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	94.217	76.998	76.998	-1908.820	0.000	-1931.777	-1908.820	-1819.372	318.746
	300.00	94.548	77.582	77.000	-1908.645	0.175	-1931.920	-1908.822	-1818.817	316.684
	400.00	106.594	106.656	80.882	-1898.511	10.309	-1941.173	-1908.324	-1788.864	233.602
	500.00	112.795	131.170	88.556	-1887.513	21.307	-1953.098	-1907.224	-1759.120	183.774
	600.00	116.694	152.103	97.446	-1876.026	32.794	-1967.288	-1905.904	-1729.621	150.577
	700.00	119.507	170.312	106.583	-1864.210	44.610	-1983.428	-1904.540	-1700.348	126.882
	800.00	121.741	186.421	115.575	-1852.144	56.676	-2001.280	-1903.215	-1671.269	109.123
	900.00	123.639	200.872	124.264	-1839.873	68.947	-2020.657	-1901.975	-1642.352	95.320
	1000.00	125.327	213.987	132.590	-1827.423	81.397	-2041.410	-1900.849	-1613.566	84.284
	1100.00	126.879	226.006	140.544	-1814.812	94.008	-2063.418	-1899.862	-1584.887	75.260
	1200.00	128.338	237.109	148.134	-1802.050	106.770	-2086.581	-1899.034	-1556.290	67.744
	1300.00	129.731	247.437	155.380	-1789.146	119.674	-2110.814	-1898.385	-1527.756	61.386
	1400.00	131.076	257.100	162.304	-1776.106	132.714	-2136.046	-1897.936	-1499.264	55.938
	1500.00	132.387	266.189	168.930	-1762.932	145.888	-2162.215	-1897.707	-1470.797	51.218
	1600.00	133.670	274.774	175.280	-1749.629	159.191	-2189.267	-1897.719	-1442.338	47.087
	1700.00	134.933	282.915	181.374	-1736.199	172.621	-2217.155	-1906.620	-1413.392	43.428
	1800.00	136.180	290.663	187.232	-1722.643	186.177	-2245.837	-1907.483	-1384.353	40.173
	1900.00	137.414	298.059	192.872	-1708.963	199.857	-2275.276	-1936.450	-1353.900	37.221
	2000.00	138.638	305.139	198.309	-1695.161	213.659	-2305.439	-1937.136	-1323.221	34.559
	2100.00	139.853	311.933	203.559	-1681.236	227.584	-2336.294	-1937.734	-1292.510	32.149
	2200.00	141.061	318.466	208.635	-1667.190	241.630	-2367.816	-1938.246	-1261.773	29.958
	2300.00	142.264	324.763	213.548	-1653.024	255.796	-2399.980	-1938.671	-1231.015	27.957
	2400.00	143.461	330.843	218.309	-1638.738	270.082	-2432.762	-1939.008	-1200.239	26.123
	2500.00	144.655	336.724	222.929	-1624.332	284.488	-2466.142	-1939.260	-1169.452	24.434
	2600.00	145.845	342.421	227.416	-1609.807	299.013	-2500.100	-1939.424	-1138.656	22.876
	2700.00	147.032	347.947	231.778	-1595.163	313.657	-2534.620	-1939.501	-1107.855	21.433
	2762.00	147.767	351.294	234.423	-1586.024	322.796	-2556.297	-1939.505	-1088.758	20.590
LIQ			47.353		130.790					
	2762.00	200.832	398.647	234.423	-1455.234	453.586	-2556.297	-1808.715	-1088.758	20.590
	2800.00	200.832	401.391	236.671	-1447.602	461.218	-2571.498	-1806.692	-1078.867	20.127
	2900.00	200.832	408.439	242.473	-1427.519	481.301	-2611.991	-1801.391	-1052.967	18.966
	3000.00	200.832	415.247	248.119	-1407.436	501.384	-2653.178	-1796.118	-1027.249	17.886

References

Phase	H / S	C _p
SOL	Nb1	Pa1
LIQ	Pa1	Pa1

78.960

SELENIUM

Se

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-G	298.15	25.376	42.258	42.258	0.000	0.000	-12.599	0.000	0.000	0.000
	300.00	25.422	42.416	42.259	0.047	0.047	-12.678	0.000	0.000	0.000
	400.00	27.932	50.073	43.286	2.715	2.715	-17.314	0.000	0.000	0.000
	493.00	30.267	56.147	45.152	5.421	5.421	-22.260	0.000	0.000	0.000
LIQ			11.882		5.858					
	493.00	35.146	68.030	45.152	11.279	11.279	-22.260	0.000	0.000	0.000
	500.00	35.146	68.525	45.475	11.525	11.525	-22.738	0.000	0.000	0.000
	600.00	35.146	74.933	49.867	15.040	15.040	-29.920	0.000	0.000	0.000
	700.00	35.146	80.351	53.845	18.554	18.554	-37.691	0.000	0.000	0.000
	800.00	35.146	85.044	57.458	22.069	22.069	-45.966	0.000	0.000	0.000
	900.00	35.146	89.183	60.758	25.583	25.583	-54.682	0.000	0.000	0.000
	1000.00	35.146	92.886	63.789	29.098	29.098	-63.789	0.000	0.000	0.000
	1007.00	35.146	93.132	63.992	29.344	29.344	-64.440	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL-G	Mi1	Mi1	hexagonal, grey Se
LIQ	Mi1	Mi1	Hu1,e BPT=1007. GAS(Se2),L=54.652kJ / NBPT=958. GAS(Se5+Se2+Se)

78.960

SELENIUM (GAS)

Se[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	20.878	176.716	176.716	235.350	0.000	182.662	235.350	195.261	-34.209
	300.00	20.893	176.845	176.716	235.389	0.039	182.335	235.342	195.013	-33.955
	400.00	21.491	182.947	177.544	237.511	2.161	164.332	234.796	181.647	-23.721
	500.00	21.849	187.784	179.125	239.679	4.329	145.787	228.154	168.525	-17.606
	600.00	22.112	191.791	180.912	241.878	6.528	126.803	226.838	156.723	-13.644
	700.00	22.330	195.217	182.716	244.100	8.750	107.448	225.546	145.140	-10.830
	800.00	22.525	198.211	184.470	246.343	10.993	87.774	224.274	133.740	-8.732
	900.00	22.706	200.875	186.148	248.605	13.255	67.817	223.021	122.499	-7.110
	1000.00	22.878	203.276	187.742	250.884	15.534	47.608	221.786	111.396	-5.819
	1100.00	23.045	205.465	189.255	253.180	17.830	27.169	167.256	105.371	-5.004
	1200.00	23.207	207.477	190.691	255.493	20.143	6.521	167.501	99.734	-4.341
	1300.00	23.368	209.341	192.055	257.822	22.472	-14.321	167.774	94.076	-3.780
	1400.00	23.526	211.078	193.352	260.166	24.816	-35.343	168.075	88.396	-3.298
	1500.00	23.682	212.707	194.589	262.527	27.177	-56.533	168.404	82.693	-2.880
	1600.00	23.838	214.240	195.770	264.903	29.553	-77.882	168.761	76.967	-2.513
	1700.00	23.993	215.690	196.899	267.294	31.944	-99.379	169.146	71.219	-2.188
	1800.00	24.147	217.066	197.982	269.701	34.351	-121.017	169.559	65.446	-1.899
	1900.00	24.300	218.375	199.021	272.124	36.774	-142.790	170.001	59.650	-1.640
	2000.00	24.453	219.626	200.020	274.561	39.211	-164.690	170.471	53.831	-1.406

References

Phase	H / S	C _p
GAS	Mi1	Mi1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]		[—————]			[————— kJ / mol —————]			[-]
GAS	298.15	40.995	243.618	243.618	138.185	0.000	65.550	138.185	90.749	-15.899
	300.00	41.024	243.872	243.619	138.261	0.076	65.099	138.167	90.455	-15.750
	400.00	41.975	255.829	245.243	142.420	4.235	40.088	136.990	74.717	-9.757
	500.00	42.272	265.234	248.334	146.635	8.450	14.018	123.585	59.493	-6.215
	600.00	42.312	272.948	251.813	150.866	12.681	-12.903	120.787	46.938	-4.086
	700.00	42.231	279.465	255.310	155.093	16.908	-40.532	117.985	34.851	-2.601
	800.00	42.085	285.095	258.689	159.310	21.125	-68.767	115.172	23.166	-1.513
	900.00	41.901	290.042	261.904	163.509	25.324	-97.528	112.343	11.835	-0.687
	1000.00	41.694	294.446	264.942	167.689	29.504	-126.757	109.494	0.820	-0.043
	1100.00	41.472	298.410	267.807	171.848	33.663	-156.403	0.000	0.000	0.000
	1200.00	41.239	302.008	270.510	175.983	37.798	-186.427	0.000	0.000	0.000
	1300.00	40.999	305.300	273.061	180.095	41.910	-216.794	0.000	0.000	0.000
	1400.00	40.754	308.329	275.474	184.183	45.998	-247.478	0.000	0.000	0.000
	1500.00	40.505	311.132	277.758	188.246	50.061	-278.453	0.000	0.000	0.000
	1600.00	40.253	313.739	279.927	192.284	54.099	-309.698	0.000	0.000	0.000
	1700.00	39.998	316.171	281.988	196.296	58.111	-341.195	0.000	0.000	0.000
	1800.00	39.742	318.450	283.951	200.283	62.098	-372.927	0.000	0.000	0.000
	1900.00	39.484	320.592	285.824	204.245	66.060	-404.880	0.000	0.000	0.000
	2000.00	39.225	322.611	287.613	208.180	69.995	-437.041	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Mi1	Mi1

236.880

SELENIUM (GAS)

Se3[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—————]
GAS	298.15	56.566	315.039	315.039	176.146	0.000	82.217	176.146	120.015	–21.026
	300.00	56.602	315.389	315.040	176.251	0.105	81.634	176.110	119.667	–20.836
	400.00	57.979	331.883	317.280	181.987	5.841	49.234	173.843	101.177	–13.212
	500.00	58.780	344.913	321.549	187.828	11.682	15.372	153.253	83.584	–8.732
	600.00	59.354	355.683	326.366	193.736	17.590	–19.674	148.617	70.087	–6.102
	700.00	59.821	364.868	331.226	199.695	23.549	–55.712	144.033	57.362	–4.280
	800.00	60.230	372.884	335.943	205.698	29.552	–92.609	139.492	45.291	–2.957
	900.00	60.606	380.000	340.450	211.740	35.594	–130.259	134.991	33.786	–1.961
	1000.00	60.962	386.404	344.731	217.819	41.673	–168.585	130.525	22.781	–1.190
	1100.00	61.304	392.230	348.788	223.932	47.786	–207.521	–33.839	27.084	–1.286
	1200.00	61.637	397.578	352.634	230.079	53.933	–247.015	–33.896	32.625	–1.420
	1300.00	61.963	402.525	356.284	236.259	60.113	–287.023	–33.884	38.169	–1.534
	1400.00	62.285	407.129	359.753	242.472	66.326	–327.508	–33.803	43.708	–1.631
	1500.00	62.603	411.437	363.057	248.716	72.570	–368.439	–33.653	49.240	–1.715
	1600.00	62.919	415.487	366.208	254.992	78.846	–409.787	–33.434	54.760	–1.788
	1700.00	63.232	419.311	369.221	261.300	85.154	–451.529	–33.145	60.263	–1.852
	1800.00	63.545	422.934	372.105	267.639	91.493	–493.643	–32.786	65.748	–1.908
	1900.00	63.855	426.378	374.871	274.009	97.863	–536.110	–32.358	71.210	–1.958
	2000.00	64.165	429.661	377.530	280.410	104.264	–578.913	–31.861	76.649	–2.002

References

Phase	H / S	C _p
GAS	Mi1	Mi1

Se4[g]

SELENIUM (GAS)

315.840

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	80.272	379.205	379.205	183.259	0.000	70.199	183.259	120.596	-21.128
	300.00	80.307	379.702	379.206	183.408	0.149	69.497	183.220	120.208	-20.930
	400.00	81.529	402.997	382.374	191.508	8.249	30.309	180.649	99.567	-13.002
	500.00	82.096	421.257	388.391	199.692	16.433	-10.936	153.592	80.014	-8.359
	600.00	82.406	436.255	395.155	207.919	24.660	-53.834	147.761	65.847	-5.732
	700.00	82.594	448.973	401.958	216.170	32.911	-98.112	141.953	52.654	-3.929
	800.00	82.717	460.011	408.540	224.435	41.176	-143.573	136.161	40.292	-2.631
	900.00	82.802	469.759	414.811	232.712	49.453	-190.071	130.379	28.656	-1.663
	1000.00	82.865	478.486	420.750	240.995	57.736	-237.491	124.604	17.663	-0.923
	1100.00	82.911	486.386	426.363	249.284	66.025	-285.741	-94.411	27.065	-1.285
	1200.00	82.948	493.602	431.670	257.577	74.318	-334.745	-94.389	38.108	-1.659
	1300.00	82.977	500.243	436.693	265.873	82.614	-384.442	-94.317	49.147	-1.975
	1400.00	83.001	506.393	441.455	274.172	90.913	-434.778	-94.194	60.178	-2.245
	1500.00	83.021	512.120	445.977	282.473	99.214	-485.706	-94.019	71.199	-2.479
	1600.00	83.037	517.478	450.280	290.776	107.517	-537.189	-93.792	82.206	-2.684
	1700.00	83.052	522.513	454.383	299.081	115.822	-589.191	-93.512	93.198	-2.864
	1800.00	83.065	527.260	458.301	307.387	124.128	-641.682	-93.180	104.172	-3.023
	1900.00	83.076	531.752	462.049	315.694	132.435	-694.635	-92.796	115.125	-3.165
	2000.00	83.086	536.013	465.642	324.002	140.743	-748.025	-92.359	126.058	-3.292

References

Phase	H / S	C _p
GAS	Mi1	Mi1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	101.302	385.360	385.360	138.072	0.000	23.177	138.072	86.174	-15.097
	300.00	101.384	385.986	385.362	138.259	0.187	22.464	138.025	85.852	-14.948
	400.00	104.266	415.607	389.380	148.563	10.491	-17.680	134.989	68.892	-8.996
	500.00	105.605	439.034	397.051	159.064	20.992	-60.453	101.439	53.235	-5.561
	600.00	106.337	458.358	405.705	169.664	31.592	-105.351	94.466	44.250	-3.852
	700.00	106.781	474.786	414.430	180.321	42.249	-152.029	87.551	36.428	-2.718
	800.00	107.073	489.065	422.886	191.015	52.943	-200.237	80.672	29.595	-1.932
	900.00	107.275	501.689	430.954	201.733	63.661	-249.787	73.817	23.622	-1.371
	1000.00	107.423	512.999	438.603	212.468	74.396	-300.531	66.979	18.412	-0.962
	1100.00	107.534	523.243	445.839	223.217	85.145	-352.351	-206.403	38.656	-1.836
	1200.00	107.621	532.604	452.685	233.974	95.902	-405.150	-205.984	60.916	-2.652
	1300.00	107.691	541.221	459.169	244.740	106.668	-458.847	-205.498	83.139	-3.341
	1400.00	107.748	549.204	465.318	255.512	117.440	-513.373	-204.945	105.321	-3.930
	1500.00	107.795	556.640	471.161	266.289	128.217	-568.670	-204.326	127.462	-4.439
	1600.00	107.836	563.598	476.723	277.071	138.999	-624.685	-203.639	149.559	-4.883
	1700.00	107.871	570.136	482.028	287.856	149.784	-681.375	-202.885	171.611	-5.273
	1800.00	107.902	576.303	487.096	298.645	160.573	-738.700	-202.064	193.617	-5.619
	1900.00	107.929	582.138	491.946	309.437	171.365	-796.625	-201.175	215.575	-5.927
	2000.00	107.954	587.674	496.595	320.231	182.159	-855.118	-200.220	237.485	-6.202

References

Phase	H / S	C _p	Remarks
GAS	Mi1	Mi1	Hu1,e BPT= 1587. LIQ to GAS (Se5), L= 5.41 kJ

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	126.260	433.614	433.614	135.143	0.000	5.861	135.143	81.457	-14.271
	300.00	126.342	434.395	433.616	135.377	0.234	5.058	135.095	81.124	-14.125
	400.00	129.229	471.196	438.614	148.176	13.033	-40.303	131.888	63.584	-8.303
	500.00	130.568	500.193	448.133	161.173	26.030	-88.923	92.023	47.502	-4.963
	600.00	131.299	524.069	458.858	174.270	39.127	-140.172	84.032	39.350	-3.426
	700.00	131.743	544.345	469.658	187.423	52.280	-193.618	76.099	32.531	-2.427
	800.00	132.033	561.957	480.119	200.613	65.470	-248.952	68.201	26.846	-1.753
	900.00	132.234	577.520	490.094	213.827	78.684	-305.941	60.328	22.150	-1.286
	1000.00	132.379	591.460	499.545	227.058	91.915	-364.402	52.471	18.329	-0.957
	1100.00	132.489	604.083	508.484	240.302	105.159	-424.189	-275.241	45.020	-2.138
	1200.00	132.574	615.615	516.938	253.555	118.412	-485.183	-274.395	74.097	-3.225
	1300.00	132.641	626.229	524.942	266.816	131.673	-547.282	-273.470	103.102	-4.143
	1400.00	132.696	636.061	532.532	280.083	144.940	-610.402	-272.466	132.031	-4.926
	1500.00	132.742	645.218	539.743	293.355	158.212	-674.471	-271.383	160.887	-5.603
	1600.00	132.780	653.786	546.606	306.631	171.488	-739.426	-270.221	189.667	-6.192
	1700.00	132.814	661.837	553.150	319.911	184.768	-805.211	-268.979	218.373	-6.710
	1800.00	132.842	669.429	559.401	333.194	198.051	-871.778	-267.657	247.003	-7.168
	1900.00	132.868	676.612	565.382	346.479	211.336	-939.084	-266.255	275.557	-7.576
	2000.00	132.891	683.428	571.116	359.767	224.624	-1007.088	-264.774	304.035	-7.941

References

Phase	H / S	C _p
GAS	Mi1	Mi1

552.720

SELENIUM (GAS)

Se7[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	148.490	486.458	486.458	143.930	0.000	-1.107	143.930	87.088	-15.257
	300.00	148.605	487.376	486.460	144.205	0.275	-2.008	143.876	86.736	-15.102
	400.00	152.637	530.762	492.348	159.296	15.366	-53.009	140.293	68.191	-8.905
	500.00	154.509	565.047	503.580	174.663	30.733	-107.860	93.988	51.303	-5.360
	600.00	155.531	593.316	516.249	190.170	46.240	-165.820	84.893	43.622	-3.798
	700.00	156.152	617.341	529.018	205.756	61.826	-226.382	75.878	37.458	-2.795
	800.00	156.559	638.221	541.392	221.393	77.463	-289.183	66.912	32.581	-2.127
	900.00	156.841	656.678	553.196	237.064	93.134	-353.946	57.981	28.827	-1.673
	1000.00	157.046	673.214	564.385	252.759	108.829	-420.455	49.074	26.065	-1.361
	1100.00	157.201	688.190	574.970	268.472	124.542	-488.537	-332.995	58.874	-2.796
	1200.00	157.322	701.873	584.983	284.198	140.268	-558.050	-331.744	94.443	-4.111
	1300.00	157.418	714.470	594.466	299.935	156.005	-628.875	-330.398	129.905	-5.220
	1400.00	157.496	726.138	603.459	315.681	171.751	-700.913	-328.960	165.260	-6.166
	1500.00	157.562	737.007	612.004	331.434	187.504	-774.076	-327.427	200.508	-6.982
	1600.00	157.618	747.178	620.138	347.193	203.263	-848.291	-325.801	235.651	-7.693
	1700.00	157.666	756.735	627.895	362.957	219.027	-923.491	-324.080	270.690	-8.317
	1800.00	157.708	765.748	635.305	378.726	234.796	-999.620	-322.266	305.625	-8.869
	1900.00	157.745	774.275	642.397	394.499	250.569	-1076.625	-320.358	340.456	-9.360
	2000.00	157.779	782.368	649.195	410.275	266.345	-1154.460	-318.356	375.184	-9.799

References

Phase	H / S	C _p
GAS	Mi1	Mi1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
GAS	298.15	173.905	531.268	531.268	154.808	0.000	-3.590	154.808	97.205	-17.030
	300.00	174.014	532.344	531.272	155.130	0.322	-4.573	154.754	96.848	-16.863
	400.00	177.853	583.010	538.153	172.751	17.943	-60.453	151.033	78.062	-10.194
	500.00	179.635	622.910	551.256	190.635	35.827	-120.820	98.435	61.081	-6.381
	600.00	180.608	655.755	566.016	208.651	53.843	-184.802	88.335	54.560	-4.750
	700.00	181.198	683.644	580.878	226.744	71.936	-251.807	78.311	49.725	-3.710
	800.00	181.584	707.866	595.271	244.884	90.076	-321.409	68.335	46.322	-3.025
	900.00	181.851	729.270	608.994	263.057	108.249	-393.286	58.391	44.168	-2.563
	1000.00	182.045	748.441	621.997	281.252	126.444	-467.189	48.470	43.120	-2.252
	1100.00	182.191	765.799	634.293	299.464	144.656	-542.914	-387.926	82.698	-3.927
	1200.00	182.305	781.656	645.922	317.689	162.881	-620.299	-386.244	125.408	-5.459
	1300.00	182.395	796.252	656.932	335.924	181.116	-699.204	-384.457	167.974	-6.749
	1400.00	182.468	809.772	667.372	354.168	199.360	-779.513	-382.564	210.398	-7.850
	1500.00	182.530	822.363	677.290	372.418	217.610	-861.127	-380.566	252.684	-8.799
	1600.00	182.581	834.145	686.729	390.673	235.865	-943.959	-378.462	294.833	-9.625
	1700.00	182.626	845.215	695.730	408.934	254.126	-1027.932	-376.252	336.846	-10.350
	1800.00	182.664	855.655	704.327	427.198	272.390	-1112.981	-373.936	378.727	-10.990
	1900.00	182.699	865.532	712.554	445.466	290.658	-1199.045	-371.513	420.476	-11.560
	2000.00	182.729	874.904	720.439	463.738	308.930	-1286.070	-368.983	462.095	-12.069

References

Phase	H / S	C _p
GAS	Mi1	Mi1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 [————— kJ / mol —————]	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	55.418	317.089	317.089	-20.920	0.000	-115.460	-20.920	-57.480	10.070
	300.00	55.452	317.432	317.090	-20.817	0.103	-116.047	-21.004	-57.706	10.048
	400.00	56.628	333.570	319.283	-15.205	5.715	-148.633	-52.542	-63.502	8.293
	500.00	57.175	346.272	323.455	-9.512	11.408	-182.648	-59.351	-66.057	6.901
	600.00	57.474	356.725	328.155	-3.778	17.142	-217.813	-60.850	-67.258	5.855
	700.00	57.656	365.599	332.886	1.979	22.899	-253.940	-62.343	-68.207	5.090
	800.00	57.776	373.306	337.467	7.751	28.671	-290.894	-63.833	-68.943	4.502
	900.00	57.860	380.116	341.835	13.533	34.453	-328.572	-65.323	-69.493	4.033
	1000.00	57.921	386.216	345.974	19.322	40.242	-366.894	-66.814	-69.876	3.650
	1100.00	57.967	391.739	349.887	25.117	46.037	-405.796	-121.619	-65.156	3.094
	1200.00	58.004	396.784	353.588	30.915	51.835	-445.225	-121.667	-60.021	2.613
	1300.00	58.033	401.428	357.092	36.717	57.637	-485.139	-121.707	-54.882	2.205
	1400.00	58.057	405.730	360.414	42.522	63.442	-525.500	-121.738	-49.740	1.856
	1500.00	58.078	409.736	363.570	48.329	69.249	-566.275	-121.760	-44.597	1.553
	1600.00	58.095	413.485	366.574	54.137	75.057	-607.438	-121.773	-39.452	1.288
	1700.00	58.111	417.007	369.438	59.947	80.867	-648.965	-121.776	-34.307	1.054
	1800.00	58.124	420.329	372.174	65.759	86.679	-690.833	-121.771	-29.162	0.846
	1900.00	58.136	423.472	374.792	71.572	92.492	-733.024	-121.757	-24.017	0.660
	2000.00	58.148	426.454	377.301	77.386	98.306	-775.522	-121.733	-18.873	0.493

References

Phase	H / S	C _p
GAS	Mi1	Mi1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	79.661	378.134	378.134	29.288	0.000	-83.453	29.288	-12.873	2.255
	300.00	79.705	378.627	378.135	29.435	0.147	-84.153	29.201	-13.134	2.287
	400.00	81.318	401.807	381.285	37.497	8.209	-123.226	-2.555	-20.781	2.714
	500.00	82.162	420.051	387.278	45.674	16.386	-164.351	-15.690	-25.023	2.614
	600.00	82.705	435.082	394.030	53.919	24.631	-207.130	-18.192	-26.654	2.320
	700.00	83.104	447.862	400.830	62.211	32.923	-251.293	-20.665	-27.869	2.080
	800.00	83.428	458.981	407.419	70.538	41.250	-296.647	-23.115	-28.730	1.876
	900.00	83.707	468.824	413.705	78.895	49.607	-343.047	-25.545	-29.286	1.700
	1000.00	83.959	477.657	419.666	87.278	57.990	-390.378	-27.956	-29.572	1.545
	1100.00	84.193	485.670	425.308	95.686	66.398	-438.551	-136.973	-19.710	0.936
	1200.00	84.415	493.005	430.648	104.117	74.829	-487.490	-136.458	-9.072	0.395
	1300.00	84.628	499.771	435.708	112.569	83.281	-537.133	-135.903	1.522	-0.061
	1400.00	84.835	506.050	440.511	121.042	91.754	-587.428	-135.309	12.071	-0.450
	1500.00	85.037	511.910	445.078	129.535	100.247	-638.329	-134.676	22.576	-0.786
	1600.00	85.235	517.404	449.428	138.049	108.761	-689.798	-134.003	33.038	-1.079
	1700.00	85.431	522.577	453.581	146.582	117.294	-741.799	-133.289	43.456	-1.335
	1800.00	85.625	527.466	457.551	155.135	125.847	-794.304	-132.537	53.831	-1.562
	1900.00	85.817	532.101	461.354	163.707	134.419	-847.284	-131.744	64.164	-1.764
	2000.00	86.008	536.507	465.002	172.299	143.011	-900.716	-130.911	74.453	-1.945

References

Phase	H / S	C _p
GAS	Mi1	Mi1

149.865

SELENIUM DICHLORIDE (GAS)

SeCl2[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	53.545	295.709	295.709	-33.472	0.000	-121.638	-33.472	-42.516	7.449
	300.00	53.600	296.040	295.710	-33.373	0.099	-122.185	-33.483	-42.572	7.412
	400.00	55.533	311.764	297.841	-27.903	5.569	-152.608	-34.147	-45.507	5.943
	500.00	56.435	324.264	301.919	-22.299	11.173	-184.431	-40.925	-48.166	5.032
	600.00	56.932	334.602	306.529	-16.629	16.843	-217.390	-42.404	-49.475	4.307
	700.00	57.236	343.402	311.184	-10.919	22.553	-251.301	-43.886	-50.537	3.771
	800.00	57.438	351.059	315.700	-5.185	28.287	-286.032	-45.372	-51.386	3.355
	900.00	57.581	357.833	320.012	0.567	34.039	-321.483	-46.860	-52.048	3.021
	1000.00	57.687	363.906	324.103	6.330	39.802	-357.575	-48.353	-52.544	2.745
	1100.00	57.769	369.408	327.976	12.103	45.575	-394.245	-103.159	-47.937	2.276
	1200.00	57.835	374.437	331.641	17.884	51.356	-431.441	-103.211	-42.915	1.868
	1300.00	57.889	379.069	335.113	23.670	57.142	-469.119	-103.253	-37.888	1.522
	1400.00	57.934	383.360	338.408	29.461	62.933	-507.244	-103.287	-32.859	1.226
	1500.00	57.974	387.359	341.540	35.257	68.729	-545.782	-103.312	-27.827	0.969
	1600.00	58.008	391.102	344.522	41.056	74.528	-584.707	-103.328	-22.794	0.744
	1700.00	58.039	394.619	347.366	46.858	80.330	-623.995	-103.335	-17.761	0.546
	1800.00	58.067	397.937	350.084	52.663	86.135	-663.624	-103.333	-12.727	0.369
	1900.00	58.093	401.078	352.686	58.472	91.944	-703.576	-103.323	-7.693	0.212
	2000.00	58.117	404.058	355.181	64.282	97.754	-743.834	-103.305	-2.661	0.069

References

Phase	H / S	C _p
GAS	Mi1	Mi1

220.771

SELENIUM TETRACHLORIDE

SeCl4

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	133.879	194.556	194.556	-188.698	0.000	-246.705	-188.698	-101.061	17.705
	300.00	133.988	195.384	194.559	-188.450	0.248	-247.066	-188.623	-100.518	17.502
	400.00	139.879	234.737	199.884	-174.757	13.941	-268.652	-184.531	-71.764	9.371
	500.00	145.771	266.583	210.136	-160.474	28.224	-293.766	-186.201	-43.973	4.594
	600.00	151.662	293.681	221.856	-145.603	43.095	-321.811	-182.114	-15.903	1.385

References

Phase	H / S	C _p
SOL	Mi1	Mi1,e

Se2Cl2

DISELENIUM DICHLORIDE

228.825

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
LIQ	298.15	127.194	246.856	246.856	-83.680	0.000	-157.280	-83.680	-65.559	11.486
	300.00	127.194	247.643	246.858	-83.445	0.235	-157.738	-83.601	-65.447	11.395
	400.00	127.194	284.234	251.847	-70.725	12.955	-184.419	-79.685	-60.003	7.836
	500.00	127.194	312.617	261.268	-58.006	25.674	-214.314	-88.157	-55.311	5.778
	600.00	127.194	335.807	271.818	-45.287	38.393	-246.771	-86.102	-48.936	4.260
	700.00	127.194	355.414	282.395	-32.567	51.113	-281.357	-84.088	-42.902	3.201

References

Phase	H / S	C _p	Remarks
LIQ	Mi1	e	Mi1,e DEC., BPT= 645.2, L= 45.76 kJ

Se2Cl2[g]

DISELENIUM DICHLORIDE (GAS)

228.825

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	77.748	353.909	353.909	-21.757	0.000	-127.275	-21.757	-35.554	6.229
	300.00	77.814	354.390	353.910	-21.613	0.144	-127.930	-21.770	-35.639	6.205
	400.00	80.168	377.143	356.996	-13.698	8.059	-164.556	-22.658	-40.140	5.242
	500.00	81.340	395.170	362.891	-5.617	16.140	-203.203	-35.768	-44.200	4.618
	600.00	82.047	410.068	369.548	2.555	24.312	-243.486	-38.261	-45.651	3.974
	700.00	82.534	422.754	376.265	10.785	32.542	-285.143	-40.736	-46.687	3.484
	800.00	82.904	433.800	382.782	19.058	40.815	-327.982	-43.198	-47.369	3.093
	900.00	83.206	443.582	389.004	27.363	49.120	-371.861	-45.647	-47.744	2.771
	1000.00	83.466	452.363	394.908	35.697	57.454	-416.665	-48.083	-47.846	2.499

References

Phase	H / S	C _p
GAS	Mi1	Mi1

97.958

SELENIUM FLUORIDE (GAS)

SeF[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	32.260	233.493	233.493	-41.840	0.000	-111.456	-41.840	-68.625	12.023
	300.00	32.314	233.693	233.494	-41.780	0.060	-111.888	-41.856	-68.791	11.978
	400.00	34.231	243.290	234.789	-38.440	3.400	-135.756	-42.790	-77.633	10.138
	500.00	35.146	251.037	237.289	-34.966	6.874	-160.485	-49.808	-86.134	8.998
	600.00	35.667	257.495	240.134	-31.423	10.417	-185.920	-51.517	-93.239	8.117
	700.00	36.002	263.020	243.018	-27.839	14.001	-211.953	-53.222	-100.057	7.466
	800.00	36.237	267.844	245.826	-24.226	17.614	-238.501	-54.927	-106.632	6.962
	900.00	36.415	272.123	248.515	-20.593	21.247	-265.503	-56.632	-112.993	6.558
	1000.00	36.557	275.967	251.071	-16.944	24.896	-292.911	-58.338	-119.163	6.224
	1100.00	36.675	279.457	253.496	-13.282	28.558	-320.685	-113.356	-120.209	5.708
	1200.00	36.778	282.653	255.794	-9.610	32.230	-348.793	-113.615	-120.821	5.259
	1300.00	36.869	285.600	257.975	-5.927	35.913	-377.207	-113.862	-121.411	4.878
	1400.00	36.952	288.335	260.047	-2.236	39.604	-405.906	-114.096	-121.983	4.551
	1500.00	37.029	290.888	262.019	1.463	43.303	-434.868	-114.316	-122.539	4.267
	1600.00	37.102	293.280	263.899	5.170	47.010	-464.078	-114.524	-123.080	4.018
	1700.00	37.171	295.531	265.694	8.883	50.723	-493.520	-114.717	-123.609	3.798
	1800.00	37.237	297.658	267.411	12.604	54.444	-523.180	-114.897	-124.127	3.602
	1900.00	37.301	299.673	269.057	16.331	58.171	-553.047	-115.062	-124.635	3.426
	2000.00	37.363	301.588	270.636	20.064	61.904	-583.111	-115.212	-125.135	3.268

References

Phase	H / S	C _p
GAS	Mi1	Mi1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
GAS	298.15	47.656	269.726	269.726	-31.254	0.000	-111.673	-31.254	-38.610	6.764
	300.00	47.772	270.022	269.727	-31.166	0.088	-112.172	-31.271	-38.656	6.731
	400.00	51.865	284.408	271.661	-26.155	5.099	-139.918	-32.141	-40.987	5.352
	500.00	53.802	296.212	275.428	-20.862	10.392	-168.968	-39.021	-43.004	4.493
	600.00	54.889	306.126	279.740	-15.422	15.832	-199.098	-40.570	-43.655	3.800
	700.00	55.576	314.642	284.132	-9.897	21.357	-230.147	-42.109	-44.047	3.287
	800.00	56.049	322.096	288.422	-4.314	26.940	-261.991	-43.647	-44.219	2.887
	900.00	56.399	328.719	292.538	1.309	32.563	-294.538	-45.186	-44.198	2.565
	1000.00	56.670	334.676	296.459	6.963	38.217	-327.713	-46.727	-44.006	2.299
	1100.00	56.892	340.088	300.183	12.641	43.895	-361.455	-101.581	-38.705	1.838
	1200.00	57.079	345.046	303.718	18.340	49.594	-395.715	-101.678	-32.985	1.436
	1300.00	57.242	349.622	307.075	24.056	55.310	-430.452	-101.764	-27.257	1.095
	1400.00	57.388	353.869	310.268	29.788	61.042	-465.629	-101.839	-21.522	0.803
	1500.00	57.521	357.833	313.308	35.534	66.788	-501.216	-101.902	-15.783	0.550
	1600.00	57.643	361.549	316.208	41.292	72.546	-537.187	-101.953	-10.040	0.328
	1700.00	57.758	365.048	318.979	47.062	78.316	-573.519	-101.991	-4.295	0.132
	1800.00	57.867	368.352	321.631	52.843	84.097	-610.190	-102.015	1.453	-0.042
	1900.00	57.972	371.484	324.173	58.635	89.889	-647.183	-102.027	7.202	-0.198
	2000.00	58.072	374.460	326.614	64.438	95.692	-684.482	-102.025	12.951	-0.338

References

Phase	H / S	C _p
GAS	Mi1	Mi1

154.954

SELENIUM TETRAFLUORIDE (GAS)

SeF4[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	71.171	296.546	296.546	-811.696	0.000	-900.111	-811.696	-766.585	134.303
	300.00	71.558	296.987	296.547	-811.564	0.132	-900.660	-811.727	-766.305	133.426
	400.00	85.310	319.732	299.555	-803.625	8.071	-931.518	-812.883	-750.969	98.066
	500.00	91.872	339.551	305.622	-794.731	16.965	-964.507	-819.526	-735.317	76.818
	600.00	95.605	356.659	312.736	-785.342	26.354	-999.338	-820.597	-718.371	62.540
	700.00	98.002	371.588	320.100	-775.654	36.042	-1035.766	-821.524	-701.259	52.329
	800.00	99.687	384.791	327.377	-765.765	45.931	-1073.598	-822.362	-684.020	44.662
	900.00	100.958	396.609	334.425	-755.730	55.966	-1112.678	-823.137	-666.680	38.693
	1000.00	101.972	407.300	341.186	-745.582	66.114	-1152.882	-823.864	-649.257	33.914
	1100.00	102.818	417.060	347.646	-735.341	76.355	-1194.107	-877.862	-626.808	29.765
	1200.00	103.550	426.038	353.810	-725.022	86.674	-1236.268	-877.067	-604.020	26.292
	1300.00	104.201	434.353	359.690	-714.634	97.062	-1279.293	-876.228	-581.300	23.357
	1400.00	104.794	442.097	365.303	-704.184	107.512	-1323.120	-875.347	-558.646	20.843
	1500.00	105.343	449.346	370.666	-693.677	118.019	-1367.696	-874.426	-536.056	18.667
	1600.00	105.859	456.161	375.799	-683.116	128.580	-1412.974	-873.464	-513.529	16.765
	1700.00	106.350	462.594	380.717	-672.506	139.190	-1458.915	-872.463	-491.064	15.089
	1800.00	106.821	468.686	385.437	-661.847	149.849	-1505.482	-871.423	-468.659	13.600
	1900.00	107.277	474.474	389.972	-651.142	160.554	-1552.642	-870.344	-446.312	12.270
	2000.00	107.719	479.988	394.336	-640.392	171.304	-1600.367	-869.227	-424.023	11.074

References

Phase	H / S	C _p
GAS	Mi1	Mi1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
GAS	298.15	95.443	321.859	321.859	-940.563	0.000	-1036.525	-940.563	-872.768	152.905
	300.00	95.855	322.451	321.861	-940.386	0.177	-1037.121	-940.578	-872.347	151.889
	400.00	110.426	352.317	325.834	-929.970	10.593	-1070.897	-940.863	-849.539	110.938
	500.00	117.322	377.780	333.746	-918.546	22.017	-1107.436	-946.657	-826.633	86.358
	600.00	121.196	399.543	342.944	-906.604	33.959	-1146.329	-946.912	-802.601	69.873
	700.00	123.644	418.422	352.408	-894.353	46.210	-1187.249	-947.052	-778.537	58.095
	800.00	125.331	435.049	361.720	-881.900	58.663	-1229.939	-947.128	-754.458	49.261
	900.00	126.576	449.886	370.706	-869.302	71.261	-1274.199	-947.164	-730.372	42.390
	1000.00	127.547	463.274	379.305	-856.594	83.969	-1319.868	-947.171	-706.283	36.892
	1100.00	128.338	475.469	387.501	-843.798	96.765	-1366.814	-1000.468	-677.241	32.159
	1200.00	129.007	486.665	395.304	-830.930	109.633	-1414.928	-998.988	-647.922	28.203
	1300.00	129.590	497.015	402.735	-818.000	122.563	-1464.119	-997.480	-618.727	24.861
	1400.00	130.111	506.638	409.817	-805.014	135.549	-1514.307	-995.946	-589.650	22.000
	1500.00	130.586	515.631	416.575	-791.979	148.584	-1565.425	-994.384	-560.683	19.525
	1600.00	131.025	524.073	423.032	-778.898	161.665	-1617.415	-992.797	-531.821	17.362
	1700.00	131.437	532.029	429.212	-765.775	174.788	-1670.224	-991.184	-503.059	15.457
	1800.00	131.828	539.553	435.135	-752.611	187.952	-1723.806	-989.546	-474.393	13.767
	1900.00	132.203	546.690	440.820	-739.410	201.153	-1778.121	-987.882	-445.819	12.256
	2000.00	132.563	553.481	446.285	-726.171	214.392	-1833.133	-986.192	-417.333	10.900

References

Phase	H / S	C _p
GAS	Mi1	Mi1

192.950

SELENIUM HEXAFLUORIDE (GAS)

SeF6[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	110.133	313.575	313.575	-1116.919	0.000	-1210.411	-1116.919	-1016.422	178.073
	300.00	110.657	314.258	313.577	-1116.715	0.204	-1210.992	-1116.936	-1015.798	176.866
	400.00	129.199	349.006	318.188	-1104.592	12.327	-1244.194	-1117.121	-982.028	128.240
	500.00	137.974	378.883	327.418	-1091.187	25.732	-1280.628	-1122.616	-948.212	99.059
	600.00	142.904	404.512	338.184	-1077.122	39.797	-1319.829	-1122.485	-913.340	79.513
	700.00	146.019	426.791	349.286	-1062.665	54.254	-1361.419	-1122.193	-878.504	65.555
	800.00	148.167	446.437	360.226	-1047.950	68.969	-1405.100	-1121.810	-843.717	55.089
	900.00	149.752	463.985	370.797	-1033.050	83.869	-1450.637	-1121.369	-808.981	46.952
	1000.00	150.988	479.829	380.921	-1018.011	98.908	-1497.840	-1120.885	-774.297	40.445
	1100.00	151.996	494.269	390.579	-1002.860	114.059	-1546.556	-1173.680	-734.708	34.888
	1200.00	152.848	507.531	399.780	-987.617	129.302	-1596.655	-1171.689	-694.890	30.248
	1300.00	153.591	519.796	408.546	-972.294	144.625	-1648.029	-1169.662	-655.238	26.328
	1400.00	154.254	531.203	416.905	-956.902	160.017	-1700.585	-1167.601	-615.744	22.974
	1500.00	154.859	541.866	424.884	-941.446	175.473	-1754.245	-1165.507	-576.399	20.072
	1600.00	155.419	551.879	432.511	-925.931	190.988	-1808.937	-1163.382	-537.194	17.538
	1700.00	155.944	561.317	439.813	-910.363	206.556	-1864.601	-1161.225	-498.123	15.305
	1800.00	156.443	570.244	446.813	-894.743	222.176	-1921.183	-1159.036	-459.180	13.325
	1900.00	156.919	578.716	453.535	-879.075	237.844	-1978.635	-1156.817	-420.360	11.556
	2000.00	157.379	586.776	459.997	-863.360	253.559	-2036.913	-1154.567	-381.657	9.968

References

Phase	H / S	C _p
GAS	Mi1	Mi1

SeO[g]

SELENIUM OXIDE (GAS)

94.959

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	31.244	233.995	233.995	62.342	0.000	-7.424	62.342	35.758	-6.265
	300.00	31.297	234.188	233.996	62.400	0.058	-7.857	62.326	35.593	-6.197
	400.00	33.238	243.495	235.251	65.639	3.297	-31.759	61.412	26.817	-3.502
	500.00	34.217	251.027	237.678	69.017	6.675	-56.497	54.450	18.372	-1.919
	600.00	34.817	257.322	240.441	72.470	10.128	-81.923	52.809	11.311	-0.985
	700.00	35.239	262.723	243.248	75.974	13.632	-107.932	51.171	4.524	-0.338
	800.00	35.566	267.450	245.984	79.515	17.173	-134.445	49.529	-2.028	0.132
	900.00	35.837	271.656	248.607	83.086	20.744	-161.404	47.882	-8.374	0.486
	1000.00	36.074	275.444	251.104	86.682	24.340	-188.762	46.232	-14.536	0.759
	1100.00	36.289	278.892	253.476	90.300	27.958	-216.482	-8.730	-15.579	0.740
	1200.00	36.488	282.059	255.728	93.939	31.597	-244.531	-8.933	-16.193	0.705
	1300.00	36.677	284.987	257.867	97.597	35.255	-272.885	-9.122	-16.790	0.675
	1400.00	36.857	287.711	259.903	101.274	38.932	-301.522	-9.296	-17.373	0.648
	1500.00	37.032	290.260	261.843	104.968	42.626	-330.422	-9.454	-17.944	0.625
	1600.00	37.203	292.656	263.694	108.680	46.338	-359.569	-9.595	-18.506	0.604
	1700.00	37.370	294.916	265.465	112.409	50.067	-388.949	-9.718	-19.059	0.586
	1800.00	37.534	297.057	267.161	116.154	53.812	-418.548	-9.824	-19.605	0.569
	1900.00	37.696	299.090	268.789	119.916	57.574	-448.356	-9.913	-20.146	0.554
	2000.00	37.857	301.028	270.352	123.693	61.351	-478.363	-9.985	-20.682	0.540

References

Phase	H / S	C _p
GAS	Mi1	Mi1

SeO2

SELENIUM DIOXIDE

110.959

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	58.098	66.693	66.693	-225.350	0.000	-245.235	-225.350	-171.471	30.041
	300.00	58.268	67.053	66.694	-225.242	0.108	-245.358	-225.344	-171.136	29.797
	400.00	66.171	84.947	69.081	-219.003	6.347	-252.982	-224.743	-153.145	19.999
	500.00	72.785	100.437	73.836	-212.049	13.301	-262.268	-229.659	-135.268	14.131
	600.00	78.891	114.252	79.440	-204.463	20.887	-273.014	-228.746	-116.467	10.139
	602.00	79.010	114.515	79.556	-204.305	21.045	-273.243	-228.723	-116.093	10.073

References

Phase	H / S	C _p	Remarks
SOL	Pa1	Pa1	Pa1 NSPT= 602.

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	43.365	262.593	262.593	-109.621	0.000	-187.913	-109.621	-114.149	19.998
	300.00	43.482	262.861	262.594	-109.541	0.080	-188.399	-109.642	-114.177	19.880
	400.00	47.825	276.043	264.361	-104.948	4.673	-215.365	-110.689	-115.528	15.086
	500.00	50.147	286.985	267.824	-100.040	9.581	-243.533	-117.650	-116.533	12.174
	600.00	51.674	296.271	271.811	-94.945	14.676	-272.708	-119.228	-116.161	10.113
	700.00	52.826	304.327	275.893	-89.718	19.903	-302.746	-120.770	-115.527	8.621
	800.00	53.777	311.444	279.901	-84.386	25.235	-333.542	-122.290	-114.674	7.487
	900.00	54.613	317.827	283.766	-78.966	30.655	-365.011	-123.790	-113.632	6.595
	1000.00	55.376	323.621	287.467	-73.466	36.155	-397.088	-125.267	-112.424	5.872
	1100.00	56.091	328.933	290.998	-67.892	41.729	-429.719	-180.028	-106.115	5.039
	1200.00	56.775	333.843	294.367	-62.249	47.372	-462.861	-180.002	-99.397	4.327
	1300.00	57.436	338.414	297.581	-56.538	53.083	-496.476	-179.930	-92.682	3.724
	1400.00	58.081	342.694	300.652	-50.762	58.859	-530.534	-179.811	-85.975	3.208
	1500.00	58.713	346.723	303.591	-44.922	64.699	-565.007	-179.644	-79.278	2.761

References

Phase	H / S	C _p
GAS	Pa1	Pa1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
SOL	298.15	19.992	18.820	18.820	0.000	0.000	-5.611	0.000	0.000	0.000
	300.00	20.048	18.943	18.820	0.037	0.037	-5.646	0.000	0.000	0.000
	400.00	22.154	25.035	19.636	2.159	2.159	-7.854	0.000	0.000	0.000
	500.00	23.337	30.115	21.238	4.438	4.438	-10.619	0.000	0.000	0.000
	600.00	24.155	34.446	23.088	6.815	6.815	-13.853	0.000	0.000	0.000
	700.00	24.802	38.220	24.986	9.264	9.264	-17.490	0.000	0.000	0.000
	800.00	25.357	41.568	26.853	11.772	11.772	-21.482	0.000	0.000	0.000
	900.00	25.859	44.584	28.658	14.333	14.333	-25.793	0.000	0.000	0.000
	1000.00	26.327	47.333	30.390	16.943	16.943	-30.390	0.000	0.000	0.000
	1100.00	26.775	49.864	32.047	19.598	19.598	-35.252	0.000	0.000	0.000
	1200.00	27.207	52.212	33.631	22.297	22.297	-40.357	0.000	0.000	0.000
	1300.00	27.629	54.407	35.146	25.039	25.039	-45.689	0.000	0.000	0.000
	1400.00	28.044	56.469	36.596	27.823	27.823	-51.234	0.000	0.000	0.000
	1500.00	28.453	58.418	37.986	30.648	30.648	-56.979	0.000	0.000	0.000
	1600.00	28.858	60.267	39.322	33.513	33.513	-62.914	0.000	0.000	0.000
	1685.00	29.199	61.770	40.416	35.981	35.981	-68.101	0.000	0.000	0.000
LIQ			29.797		50.208					
	1685.00	27.196	91.567	40.416	86.189	86.189	-68.101	0.000	0.000	0.000
	1700.00	27.196	91.808	40.869	86.597	86.597	-69.477	0.000	0.000	0.000
	1800.00	27.196	93.362	43.742	89.316	89.316	-78.736	0.000	0.000	0.000
	1900.00	27.196	94.833	46.393	92.036	92.036	-88.146	0.000	0.000	0.000
	2000.00	27.196	96.228	48.850	94.756	94.756	-97.700	0.000	0.000	0.000
	2100.00	27.196	97.555	51.138	97.475	97.475	-107.390	0.000	0.000	0.000
	2200.00	27.196	98.820	53.277	100.195	100.195	-117.209	0.000	0.000	0.000
	2300.00	27.196	100.029	55.283	102.914	102.914	-127.152	0.000	0.000	0.000
	2400.00	27.196	101.186	57.172	105.634	105.634	-137.213	0.000	0.000	0.000
	2500.00	27.196	102.296	58.955	108.354	108.354	-147.388	0.000	0.000	0.000
	2600.00	27.196	103.363	60.643	111.073	111.073	-157.671	0.000	0.000	0.000
	2700.00	27.196	104.389	62.244	113.793	113.793	-168.059	0.000	0.000	0.000
	2800.00	27.196	105.379	63.767	116.512	116.512	-178.548	0.000	0.000	0.000
	2900.00	27.196	106.333	65.218	119.232	119.232	-189.133	0.000	0.000	0.000
	3000.00	27.196	107.255	66.604	121.952	121.952	-199.813	0.000	0.000	0.000
	3100.00	27.196	108.147	67.930	124.671	124.671	-210.583	0.000	0.000	0.000
	3200.00	27.196	109.010	69.200	127.391	127.391	-221.441	0.000	0.000	0.000
	3300.00	27.196	109.847	70.420	130.110	130.110	-232.384	0.000	0.000	0.000
	3400.00	27.196	110.659	71.591	132.830	132.830	-243.410	0.000	0.000	0.000
	3500.00	27.196	111.447	72.719	135.550	135.550	-254.515	0.000	0.000	0.000
	3504.62	27.196	111.483	72.770	135.675	135.675	-255.030	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja2 BPT=3504.616 GAS(Si),L=384.548 kJ/ NBPT=3490.(Si+Si2+Si3)

28.085

SILICON (GAS)

Si[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	22.252	167.980	167.980	450.000	0.000	399.917	450.000	405.528	–71.047
	300.00	22.233	168.118	167.980	450.041	0.041	399.606	450.004	405.252	–70.561
	400.00	21.607	174.413	168.843	452.228	2.228	382.463	450.069	390.317	–50.970
	500.00	21.326	179.201	170.455	454.373	4.373	364.773	449.935	375.392	–39.217
	600.00	21.161	183.074	172.245	456.497	6.497	346.653	449.682	360.505	–31.385
	700.00	21.056	186.327	174.031	458.607	8.607	328.178	449.344	345.668	–25.794
	800.00	20.993	189.134	175.747	460.710	10.710	309.402	448.937	330.885	–21.605
	900.00	20.964	191.605	177.375	462.807	12.807	290.363	448.474	316.155	–18.349
	1000.00	20.964	193.813	178.910	464.903	14.903	271.090	447.960	301.480	–15.748
	1100.00	20.989	195.812	180.357	467.001	17.001	251.607	447.403	286.859	–13.622
	1200.00	21.036	197.641	181.722	469.102	19.102	231.933	446.804	272.290	–11.852
	1300.00	21.103	199.327	183.013	471.209	21.209	212.084	446.169	257.773	–10.357
	1400.00	21.187	200.894	184.235	473.323	23.323	192.072	445.500	243.306	–9.078
	1500.00	21.285	202.359	185.395	475.447	25.447	171.908	444.799	228.888	–7.971
	1600.00	21.394	203.736	186.498	477.580	27.580	151.603	444.067	214.517	–7.003
	1700.00	21.512	205.036	187.551	479.726	29.726	131.164	393.129	200.640	–6.165
	1800.00	21.635	206.270	188.557	481.883	31.883	110.598	392.567	189.334	–5.494
	1900.00	21.762	207.443	189.520	484.053	34.053	89.912	392.017	178.058	–4.895
	2000.00	21.888	208.562	190.444	486.235	36.235	69.111	391.480	166.811	–4.357
	2100.00	22.013	209.633	191.333	488.430	38.430	48.201	390.955	155.591	–3.870
	2200.00	22.132	210.660	192.188	490.638	40.638	27.186	390.443	144.395	–3.428
	2300.00	22.242	211.646	193.013	492.856	42.856	6.070	389.942	133.222	–3.026
	2400.00	22.347	212.595	193.809	495.086	45.086	–15.142	389.452	122.071	–2.657
	2500.00	22.444	213.509	194.579	497.325	47.325	–36.448	388.972	110.940	–2.318
	2600.00	22.534	214.391	195.324	499.574	49.574	–57.843	388.501	99.828	–2.006
	2700.00	22.616	215.243	196.046	501.832	51.832	–79.325	388.039	88.734	–1.717
	2800.00	22.691	216.067	196.747	504.097	54.097	–100.891	387.585	77.657	–1.449
	2900.00	22.758	216.865	197.427	506.370	56.370	–122.537	387.138	66.596	–1.200
	3000.00	22.818	217.637	198.088	508.649	58.649	–144.263	386.697	55.550	–0.967
	3100.00	22.871	218.386	198.730	510.933	60.933	–166.064	386.262	44.519	–0.750
	3200.00	22.918	219.113	199.356	513.223	63.223	–187.939	385.832	33.502	–0.547
	3300.00	22.958	219.819	199.965	515.517	65.517	–209.886	385.406	22.499	–0.356
	3400.00	22.992	220.505	200.559	517.814	67.814	–231.902	384.984	11.508	–0.177
	3500.00	23.020	221.172	201.139	520.115	70.115	–253.986	384.565	0.529	–0.008
	3600.00	23.045	221.821	201.704	522.418	72.418	–276.136	0.000	0.000	0.000
	3700.00	23.064	222.452	202.257	524.724	74.724	–298.350	0.000	0.000	0.000
	3800.00	23.080	223.068	202.796	527.031	77.031	–320.626	0.000	0.000	0.000
	3900.00	23.092	223.667	203.324	529.339	79.339	–342.963	0.000	0.000	0.000
	4000.00	23.102	224.252	203.840	531.649	81.649	–365.359	0.000	0.000	0.000
	4100.00	23.108	224.823	204.345	533.960	83.960	–387.813	0.000	0.000	0.000
	4200.00	23.111	225.379	204.839	536.271	86.271	–410.323	0.000	0.000	0.000
	4300.00	23.113	225.923	205.323	538.582	88.582	–432.888	0.000	0.000	0.000
	4400.00	23.113	226.455	205.797	540.893	90.893	–455.507	0.000	0.000	0.000
	4500.00	23.111	226.974	206.262	543.204	93.204	–478.179	0.000	0.000	0.000
	4600.00	23.108	227.482	206.718	545.515	95.515	–500.902	0.000	0.000	0.000
	4700.00	23.104	227.979	207.165	547.826	97.826	–523.675	0.000	0.000	0.000
	4800.00	23.100	228.465	207.604	550.136	100.136	–546.497	0.000	0.000	0.000
	4900.00	23.096	228.942	208.034	552.446	102.446	–569.367	0.000	0.000	0.000
	5000.00	23.093	229.408	208.457	554.755	104.755	–592.285	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Ja2	Ja1

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		[————— J / (K mol) —————]		[—————]	[—————	kJ / mol	—————]			[-]
GAS	298.15	34.456	229.790	229.790	589.900	0.000	521.388	589.900	532.610	-93.311
	300.00	34.486	230.003	229.791	589.964	0.064	520.963	589.890	532.255	-92.674
	400.00	36.183	240.151	231.163	593.495	3.595	497.435	589.176	513.144	-67.010
	500.00	38.037	248.424	233.812	597.206	7.306	472.994	588.329	494.233	-51.632
	600.00	39.786	255.516	236.852	601.099	11.199	447.789	587.469	475.494	-41.395
	700.00	41.266	261.765	239.973	605.154	15.254	421.919	586.626	456.899	-34.094
	800.00	42.415	267.354	243.052	609.341	19.441	395.458	585.796	438.423	-28.626
	900.00	43.231	272.400	246.038	613.626	23.726	368.466	584.959	420.051	-24.379
	1000.00	43.740	276.983	248.906	617.977	28.077	340.994	584.091	401.774	-20.987
	1100.00	43.986	281.166	251.652	622.365	32.465	313.083	583.169	383.587	-18.215
	1200.00	44.022	284.996	254.273	626.767	36.867	284.772	582.172	365.486	-15.909
	1300.00	43.905	288.516	256.774	631.165	41.265	256.094	581.086	347.473	-13.962
	1400.00	43.699	291.762	259.159	635.545	45.645	227.078	579.899	329.546	-12.296
	1500.00	43.468	294.769	261.434	639.903	50.003	197.750	578.608	311.708	-10.855
	1600.00	43.276	297.568	263.606	644.240	54.340	168.131	577.213	293.960	-9.597
	1700.00	43.193	300.188	265.681	648.562	58.662	138.242	475.369	277.195	-8.517
	1800.00	42.962	302.649	267.667	652.867	62.967	108.099	474.234	265.571	-7.707
	1900.00	42.810	304.968	269.570	657.155	67.255	77.717	473.083	254.010	-6.983
	2000.00	42.678	307.160	271.395	661.430	71.530	47.109	471.918	242.510	-6.334
	2100.00	42.568	309.240	273.148	665.692	75.792	16.289	470.741	231.068	-5.748
	2200.00	42.478	311.218	274.834	669.944	80.044	-14.735	469.554	219.683	-5.216
	2300.00	42.406	313.104	276.457	674.188	84.288	-45.952	468.359	208.352	-4.732
	2400.00	42.351	314.908	278.022	678.426	88.526	-77.353	467.158	197.073	-4.289
	2500.00	42.310	316.636	279.532	682.658	92.758	-108.931	465.951	185.844	-3.883
	2600.00	42.281	318.295	280.992	686.888	96.988	-140.678	464.742	174.664	-3.509
	2700.00	42.263	319.890	282.403	691.115	101.215	-172.588	463.530	163.530	-3.164
	2800.00	42.255	321.427	283.769	695.341	105.441	-204.654	462.316	152.441	-2.844
	2900.00	42.254	322.910	285.094	699.566	109.666	-236.871	461.102	141.395	-2.547
	3000.00	42.259	324.342	286.378	703.792	113.892	-269.234	459.889	130.392	-2.270
	3100.00	42.270	325.728	287.625	708.018	118.118	-301.738	458.676	119.429	-2.012
	3200.00	42.286	327.070	288.837	712.246	122.346	-334.378	457.464	108.504	-1.771
	3300.00	42.306	328.372	290.015	716.476	126.576	-367.151	456.255	97.618	-1.545
	3400.00	42.330	329.635	291.162	720.707	130.807	-400.051	455.047	86.768	-1.333
	3500.00	42.358	330.862	292.279	724.942	135.042	-433.077	453.843	75.954	-1.134

References

Phase	H / S	C _p
GAS	Ja2	Ja1

84.257

SILICON (GAS)

Si3[g]

Phase	T [K]	C _p [J / (K mol)	S J / (K mol)	-(G-H298)/T [J / (K mol)	H [kJ / mol	H-H298 [kJ / mol	G [kJ / mol	ΔH _f [kJ / mol	ΔG _f [kJ / mol	log K _f [-]
GAS	298.15	55.055	267.900	267.900	636.000	0.000	556.126	636.000	572.959	-100.380
	300.00	55.121	268.241	267.901	636.102	0.102	555.630	635.991	572.568	-99.693
	400.00	57.783	284.502	270.100	641.761	5.761	527.960	635.283	551.523	-72.022
	500.00	59.256	297.570	274.330	647.620	11.620	498.835	634.304	530.693	-55.441
	600.00	60.133	308.457	279.136	653.593	17.593	468.518	633.148	510.076	-44.406
	700.00	60.689	317.772	284.006	659.636	23.636	437.196	631.844	489.665	-36.539
	800.00	61.061	325.901	288.746	665.724	29.724	405.003	630.407	469.451	-30.652
	900.00	61.321	333.109	293.282	671.844	35.844	372.046	628.844	449.424	-26.084
	1000.00	61.512	339.580	297.594	677.986	41.986	338.406	627.157	429.577	-22.439
	1100.00	61.659	345.450	301.682	684.145	48.145	304.150	625.350	409.906	-19.465
	1200.00	61.779	350.820	305.556	690.317	54.317	269.333	623.425	390.404	-16.994
	1300.00	61.885	355.770	309.231	696.500	60.500	234.000	621.383	371.068	-14.910
	1400.00	61.986	360.359	312.721	702.694	66.694	198.191	619.225	351.893	-13.129
	1500.00	62.087	364.640	316.041	708.898	72.898	161.938	616.954	332.876	-11.592
	1600.00	62.196	368.650	319.205	715.112	79.112	125.272	614.571	314.015	-10.252
	1700.00	62.316	372.424	322.226	721.337	85.337	88.216	611.547	296.646	-9.115
	1800.00	62.451	375.990	325.115	727.575	91.575	50.794	607.626	287.002	-8.329
	1900.00	62.606	379.370	327.882	733.828	97.828	13.024	602.720	277.464	-7.628
	2000.00	62.783	382.586	330.537	740.097	104.097	-25.075	596.830	268.026	-7.000
	2100.00	62.986	385.654	333.089	746.385	110.385	-63.488	589.960	258.681	-6.434
	2200.00	63.218	388.589	335.546	752.695	116.695	-102.201	582.111	249.426	-5.922
	2300.00	63.440	391.404	337.914	759.028	123.028	-141.202	573.285	240.254	-5.456
	2400.00	63.692	394.109	340.199	765.384	129.384	-180.478	563.482	231.161	-5.031
	2500.00	63.963	396.715	342.408	771.767	135.767	-220.020	552.706	222.142	-4.641
	2600.00	64.245	399.229	344.545	778.177	142.177	-259.818	540.958	213.194	-4.283
	2700.00	64.534	401.659	346.616	784.616	148.616	-299.863	528.238	204.313	-3.953
	2800.00	64.828	404.011	348.624	791.084	155.084	-340.147	514.547	195.495	-3.647
	2900.00	65.124	406.291	350.573	797.582	161.582	-380.663	499.886	186.737	-3.363
	3000.00	65.419	408.504	352.468	804.109	168.109	-421.403	484.254	178.036	-3.100
	3100.00	65.714	410.654	354.310	810.666	174.666	-462.362	467.652	169.388	-2.854
	3200.00	66.008	412.745	356.104	817.252	181.252	-503.532	450.079	160.792	-2.625
	3300.00	66.298	414.781	357.851	823.867	187.867	-544.909	431.536	152.244	-2.410
	3400.00	66.587	416.764	359.555	830.511	194.511	-586.487	412.021	143.743	-2.208
	3500.00	66.872	418.698	361.217	837.184	201.184	-628.260	400.535	135.286	-2.019

References

Phase	H / S	C _p
GAS	Ja2	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	38.725	247.426	247.426	235.141	0.000	161.371	235.141	189.673	-33.230
	300.00	38.745	247.665	247.426	235.213	0.072	160.913	235.106	189.391	-32.976
	400.00	39.046	258.878	248.953	239.111	3.970	135.560	219.640	177.322	-23.156
	500.00	38.893	267.576	251.841	243.009	7.868	109.221	219.413	166.766	-17.422
	600.00	38.727	274.652	255.072	246.889	11.748	82.098	219.058	156.268	-13.604
	700.00	38.605	280.612	258.306	250.756	15.615	54.327	218.608	145.838	-10.883
	800.00	38.525	285.762	261.423	254.612	19.471	26.003	218.082	135.477	-8.846
	900.00	38.477	290.296	264.384	258.462	23.321	-2.805	217.492	125.186	-7.266
	1000.00	38.452	294.349	267.182	262.308	27.167	-32.041	216.846	114.964	-6.005
	1100.00	38.445	298.013	269.821	266.153	31.012	-61.662	216.149	104.809	-4.977
	1200.00	38.451	301.359	272.311	269.997	34.856	-91.633	215.405	94.720	-4.123
	1300.00	38.467	304.437	274.666	273.843	38.702	-121.925	214.616	84.695	-3.403
	1400.00	38.491	307.288	276.895	277.691	42.550	-152.513	213.784	74.732	-2.788
	1500.00	38.520	309.945	279.011	281.542	46.401	-183.376	212.911	64.830	-2.258
	1600.00	38.554	312.432	281.023	285.395	50.254	-214.496	211.998	54.987	-1.795
	1700.00	38.591	314.770	282.940	289.253	54.112	-245.857	210.868	45.650	-1.403
	1800.00	38.632	316.977	284.770	293.114	57.973	-277.446	210.103	38.894	-1.129
	1900.00	38.674	319.067	286.521	296.979	61.838	-309.249	210.340	32.181	-0.885
	2000.00	38.719	321.052	288.198	300.849	65.708	-341.256	210.578	25.509	-0.666

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [—————]	S J / (K mol)	—(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	53.638	305.207	305.207	-52.300	0.000	-143.297	-52.300	-92.305	16.171
	300.00	53.685	305.539	305.208	-52.201	0.099	-143.862	-52.378	-92.553	16.115
	400.00	55.474	321.259	307.339	-46.732	5.568	-175.236	-83.514	-99.565	13.002
	500.00	56.393	333.747	311.415	-41.134	11.166	-208.007	-83.887	-103.535	10.816
	600.00	56.921	344.079	316.023	-35.466	16.834	-241.914	-84.314	-107.426	9.352
	700.00	57.250	352.880	320.675	-29.756	22.544	-276.772	-84.788	-111.241	8.301
	800.00	57.468	360.540	325.190	-24.020	28.280	-312.452	-85.308	-114.985	7.508
	900.00	57.619	367.318	329.501	-18.265	34.035	-348.851	-85.871	-118.661	6.887
	1000.00	57.728	373.394	333.592	-12.497	39.803	-385.892	-86.479	-122.272	6.387
	1100.00	57.809	378.900	337.464	-6.720	45.580	-423.511	-87.130	-125.820	5.975
	1200.00	57.871	383.933	341.130	-0.936	51.364	-461.656	-87.825	-129.307	5.629
	1300.00	57.919	388.567	344.603	4.853	57.153	-500.284	-88.563	-132.735	5.333
	1400.00	57.957	392.861	347.899	10.647	62.947	-539.358	-89.344	-136.104	5.078
	1500.00	57.988	396.861	351.031	16.444	68.744	-578.847	-90.169	-139.415	4.855
	1600.00	58.014	400.604	354.014	22.245	74.545	-618.722	-91.037	-142.670	4.658
	1700.00	58.035	404.122	356.859	28.047	80.347	-658.960	-142.125	-145.423	4.468
	1800.00	58.053	407.439	359.578	33.851	86.151	-699.540	-142.853	-145.596	4.225
	1900.00	58.069	410.579	362.180	39.658	91.958	-740.442	-143.585	-145.728	4.006
	2000.00	58.083	413.558	364.675	45.465	97.765	-781.650	-144.320	-145.822	3.808

References

Phase	H / S	C _p
GAS	Ja1	Ja1

SiBr3[g]

SILICON TRIBROMIDE (GAS)

267.798

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
GAS	298.15	74.578	351.775	351.775	-201.669	0.000	-306.551	-201.669	-232.868	40.797
	300.00	74.664	352.236	351.776	-201.531	0.138	-307.202	-201.778	-233.061	40.579
	400.00	77.952	374.221	354.751	-193.881	7.788	-343.569	-247.974	-233.990	30.556
	500.00	79.671	391.819	360.464	-185.992	15.677	-381.901	-247.901	-230.503	24.080
	600.00	80.670	406.441	366.943	-177.970	23.699	-421.835	-247.834	-227.029	19.765
	700.00	81.299	418.927	373.499	-169.870	31.799	-463.118	-247.785	-223.566	16.683
	800.00	81.719	429.812	379.872	-161.717	39.952	-505.567	-247.763	-220.108	14.372
	900.00	82.013	439.455	385.967	-153.530	48.139	-549.039	-247.773	-216.651	12.574
	1000.00	82.225	448.107	391.756	-145.318	56.351	-593.425	-247.818	-213.191	11.136
	1100.00	82.384	455.952	397.241	-137.087	64.582	-638.634	-247.902	-209.724	9.959
	1200.00	82.505	463.126	402.437	-128.842	72.827	-684.593	-248.026	-206.248	8.978
	1300.00	82.599	469.733	407.362	-120.587	81.082	-731.240	-248.191	-202.761	8.147
	1400.00	82.674	475.858	412.039	-112.323	89.346	-778.523	-248.398	-199.258	7.434
	1500.00	82.734	481.564	416.486	-104.052	97.617	-826.398	-248.648	-195.740	6.816
	1600.00	82.782	486.905	420.722	-95.776	105.893	-874.824	-248.941	-192.203	6.275
	1700.00	82.822	491.925	424.764	-87.496	114.173	-923.768	-299.456	-188.200	5.783
	1800.00	82.855	496.660	428.628	-79.212	122.457	-973.199	-299.611	-181.651	5.271
	1900.00	82.883	501.140	432.328	-70.925	130.744	-1023.091	-299.771	-175.094	4.814
	2000.00	82.906	505.392	435.875	-62.636	139.033	-1073.420	-299.936	-168.528	4.401

References

Phase	H / S	C _p
GAS	Ja1	Ja1

SiBr4

SILICON TETRABROMIDE

347.701

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
LIQ	298.15	146.440	278.236	278.236	-457.311	0.000	-540.267	-457.311	-443.893	77.768
	300.00	146.440	279.142	278.239	-457.040	0.271	-540.783	-457.357	-443.810	77.274
	400.00	146.440	321.270	283.983	-442.396	14.915	-570.904	-513.800	-427.416	55.815
	500.00	146.440	353.947	294.829	-427.752	29.559	-604.726	-508.819	-406.401	42.456

References

Phase	H / S	C _p
LIQ	Ja1,Tk1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
GAS	298.15	97.004	379.347	379.347	-415.471	0.000	-528.573	-415.471	-432.200	75.720
	300.00	97.114	379.948	379.349	-415.291	0.180	-529.276	-415.608	-432.303	75.271
	400.00	101.326	408.532	383.218	-405.345	10.126	-568.758	-476.749	-425.270	55.535
	500.00	103.549	431.405	390.645	-395.091	20.380	-610.793	-476.158	-412.468	43.090
	600.00	104.848	450.409	399.066	-384.666	30.805	-654.911	-475.546	-399.788	34.805
	700.00	105.667	466.637	407.589	-374.137	41.334	-700.783	-474.937	-387.210	28.894
	800.00	106.215	480.785	415.873	-363.541	51.930	-748.169	-474.345	-374.718	24.467
	900.00	106.599	493.319	423.795	-352.899	62.572	-796.886	-473.779	-362.299	21.027
	1000.00	106.878	504.565	431.319	-342.225	73.246	-846.790	-473.245	-349.942	18.279
	1100.00	107.086	514.762	438.449	-331.526	83.945	-897.764	-472.747	-337.636	16.033
	1200.00	107.245	524.087	445.202	-320.809	94.662	-949.714	-472.289	-325.373	14.163
	1300.00	107.369	532.676	451.605	-310.078	105.393	-1002.557	-471.871	-313.148	12.582
	1400.00	107.467	540.637	457.683	-299.336	116.135	-1056.228	-471.496	-300.952	11.229
	1500.00	107.546	548.054	463.464	-288.585	126.886	-1110.667	-471.164	-288.783	10.056
	1600.00	107.610	554.997	468.970	-277.828	137.643	-1165.823	-470.876	-276.634	9.031
	1700.00	107.663	561.523	474.224	-267.064	148.407	-1221.652	-520.812	-264.054	8.113
	1800.00	107.707	567.678	479.247	-256.295	159.176	-1278.115	-520.388	-248.963	7.225
	1900.00	107.743	573.502	484.056	-245.523	169.948	-1335.177	-519.972	-233.895	6.430
	2000.00	107.774	579.029	488.667	-234.747	180.724	-1392.806	-519.561	-218.849	5.716

References

Phase	H / S	C _p
GAS	Ja1	Ja1

SiC

SILICON CARBIDE (CUBIC)

40.097

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[-
SOL	298.15	26.977	16.611	16.611	-73.220	0.000	-78.172	-73.220	-70.850	12.413
	300.00	27.092	16.778	16.611	-73.170	0.050	-78.203	-73.223	-70.835	12.333
	400.00	33.637	25.481	17.753	-70.129	3.091	-80.321	-73.341	-70.018	9.143
	500.00	38.647	33.559	20.118	-66.499	6.721	-83.279	-73.322	-69.187	7.228
	600.00	42.090	40.929	22.982	-62.452	10.768	-87.009	-73.231	-68.368	5.952
	700.00	44.505	47.609	26.031	-58.115	15.105	-91.442	-73.122	-67.566	5.042
	800.00	46.264	53.672	29.113	-53.573	19.647	-96.510	-73.011	-66.780	4.360
	900.00	47.595	59.202	32.154	-48.877	24.343	-102.158	-72.909	-66.007	3.831
	1000.00	48.639	64.272	35.116	-44.063	29.157	-108.336	-72.824	-65.245	3.408
	1100.00	49.484	68.949	37.981	-39.155	34.065	-115.000	-72.761	-64.491	3.062
	1200.00	50.187	73.286	40.745	-34.171	39.049	-122.114	-72.721	-63.741	2.775
	1300.00	50.786	77.327	43.405	-29.121	44.099	-129.647	-72.705	-62.993	2.531
	1400.00	51.308	81.110	45.965	-24.016	49.204	-137.571	-72.713	-62.246	2.322
	1500.00	51.770	84.666	48.428	-18.862	54.358	-145.862	-72.743	-61.497	2.142
	1600.00	52.187	88.021	50.798	-13.664	59.556	-154.497	-72.794	-60.746	1.983
	1700.00	52.569	91.197	53.082	-8.426	64.794	-163.460	-123.043	-59.544	1.830
	1800.00	52.921	94.211	55.284	-3.151	70.069	-172.731	-122.909	-55.813	1.620
	1900.00	53.251	97.082	57.409	2.158	75.378	-182.297	-122.754	-52.089	1.432
	2000.00	53.562	99.821	59.462	7.499	80.719	-192.143	-122.580	-48.375	1.263
	2100.00	53.857	102.441	61.446	12.870	86.090	-202.257	-122.388	-44.669	1.111
	2200.00	54.139	104.953	63.367	18.270	91.490	-212.628	-122.178	-40.973	0.973
	2300.00	54.411	107.366	65.228	23.697	96.917	-223.245	-121.949	-37.287	0.847
	2400.00	54.674	109.687	67.033	29.152	102.372	-234.098	-121.702	-33.611	0.732
	2500.00	54.929	111.925	68.784	34.632	107.852	-245.180	-121.437	-29.946	0.626
	2600.00	55.178	114.084	70.485	40.137	113.357	-256.481	-121.154	-26.292	0.528
	2700.00	55.421	116.171	72.138	45.667	118.887	-267.994	-120.855	-22.649	0.438
	2800.00	55.659	118.191	73.747	51.221	124.441	-279.712	-120.538	-19.017	0.355
	2900.00	55.892	120.148	75.314	56.799	130.019	-291.630	-120.205	-15.398	0.277
	3000.00	56.122	122.047	76.840	62.399	135.619	-303.740	-119.855	-11.789	0.205
	3100.00	56.349	123.890	78.328	68.023	141.243	-316.037	-119.488	-8.193	0.138
	3200.00	56.573	125.683	79.780	73.669	146.889	-328.516	-119.106	-4.609	0.075
	3245.00	56.673	126.474	80.422	76.217	149.437	-334.190	-118.928	-3.000	0.048

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja2 NDPT= 3245.

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _r [-]
GAS	298.15	35.738	237.828	237.828	198.322	0.000	127.414	198.322	166.286	-29.133
	300.00	35.758	238.049	237.828	198.388	0.066	126.974	198.320	166.087	-28.918
	400.00	36.508	248.453	239.242	202.006	3.684	102.625	198.082	155.373	-20.290
	500.00	36.882	256.644	241.932	205.678	7.356	77.356	197.689	144.739	-15.121
	600.00	37.107	263.389	244.963	209.378	11.056	51.344	197.195	134.194	-11.683
	700.00	37.263	269.122	248.015	213.097	14.775	24.712	196.627	123.738	-9.233
	800.00	37.382	274.106	250.971	216.829	18.507	-2.455	195.998	113.367	-7.402
	900.00	37.479	278.514	253.791	220.573	22.251	-30.090	195.317	103.079	-5.983
	1000.00	37.562	282.467	256.465	224.325	26.003	-58.143	194.589	92.869	-4.851
	1100.00	37.637	286.051	258.994	228.085	29.763	-86.571	193.817	82.734	-3.929
	1200.00	37.706	289.329	261.387	231.852	33.530	-115.343	193.003	72.671	-3.163
	1300.00	37.770	292.350	263.654	235.626	37.304	-144.429	192.149	62.678	-2.518
	1400.00	37.832	295.151	265.805	239.406	41.084	-173.805	191.254	52.752	-1.968
	1500.00	37.891	297.763	267.850	243.192	44.870	-203.453	190.321	42.891	-1.494
	1600.00	37.949	300.210	269.797	246.984	48.662	-233.353	189.350	33.094	-1.080
	1700.00	38.005	302.513	271.654	250.782	52.460	-263.490	138.163	23.805	-0.731
	1800.00	38.060	304.687	273.429	254.585	56.263	-293.851	137.341	17.102	-0.496
	1900.00	38.114	306.746	275.129	258.394	60.072	-324.423	136.522	10.445	-0.287
	2000.00	38.168	308.702	276.759	262.208	63.886	-355.196	135.704	3.830	-0.100

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	51.243	281.316	281.316	-168.615	0.000	-252.489	-168.615	-180.356	31.598
	300.00	51.309	281.633	281.317	-168.520	0.095	-253.010	-168.620	-180.429	31.415
	400.00	53.898	296.789	283.366	-163.246	5.369	-281.961	-168.935	-184.320	24.070
	500.00	55.294	308.981	287.310	-157.779	10.836	-312.270	-169.319	-188.123	19.653
	600.00	56.118	319.141	291.792	-152.206	16.409	-343.690	-169.757	-191.844	16.701
	700.00	56.641	327.834	296.335	-146.566	22.049	-376.049	-170.243	-195.487	14.587
	800.00	56.992	335.421	300.757	-140.883	27.732	-409.220	-170.774	-199.058	12.997
	900.00	57.239	342.149	304.989	-135.171	33.444	-443.105	-171.348	-202.559	11.756
	1000.00	57.418	348.190	309.012	-129.438	39.177	-477.627	-171.966	-205.994	10.760
	1100.00	57.553	353.669	312.827	-123.689	44.926	-512.724	-172.626	-209.366	9.942
	1200.00	57.655	358.681	316.442	-117.928	50.687	-548.345	-173.328	-212.675	9.258
	1300.00	57.735	363.299	319.871	-112.158	56.457	-584.448	-174.073	-215.924	8.676
	1400.00	57.799	367.580	323.128	-106.382	62.233	-620.994	-174.861	-219.114	8.175
	1500.00	57.850	371.570	326.226	-100.599	68.016	-657.954	-175.692	-222.246	7.739
	1600.00	57.891	375.305	329.178	-94.812	73.803	-695.300	-176.567	-225.321	7.356
	1700.00	57.925	378.816	331.996	-89.021	79.594	-733.007	-227.662	-227.894	7.002
	1800.00	57.953	382.127	334.690	-83.227	85.388	-771.056	-228.398	-227.886	6.613
	1900.00	57.977	385.261	337.269	-77.431	91.184	-809.427	-229.139	-227.838	6.264
	2000.00	57.996	388.236	339.744	-71.632	96.983	-848.103	-229.885	-227.750	5.948
	2100.00	58.012	391.066	342.121	-65.831	102.784	-887.069	-230.636	-227.625	5.662
	2200.00	58.026	393.765	344.408	-60.029	108.586	-926.312	-231.394	-227.464	5.401

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [– –]
GAS	298.15	70.732	318.177	318.177	–390.367	0.000	–485.232	–390.367	–379.837	66.546
	300.00	70.847	318.615	318.178	–390.236	0.131	–485.821	–390.367	–379.772	66.124
	400.00	75.387	339.687	321.021	–382.900	7.467	–518.775	–390.355	–376.240	49.132
	500.00	77.876	356.802	326.520	–375.226	15.141	–553.627	–390.316	–372.716	38.937
	600.00	79.358	371.142	332.794	–367.358	23.009	–590.044	–390.277	–369.200	32.142
	700.00	80.304	383.452	339.173	–359.372	30.995	–627.788	–390.255	–365.689	27.288
	800.00	80.941	394.219	345.395	–351.308	39.059	–666.683	–390.257	–362.180	23.648
	900.00	81.390	403.780	351.361	–343.190	47.177	–706.592	–390.289	–358.669	20.817
	1000.00	81.716	412.373	357.040	–335.034	55.333	–747.407	–390.354	–355.153	18.551
	1100.00	81.961	420.173	362.430	–326.849	63.518	–789.040	–390.455	–351.628	16.697
	1200.00	82.148	427.313	367.544	–318.643	71.724	–831.419	–390.595	–348.092	15.152
	1300.00	82.294	433.895	372.398	–310.421	79.946	–874.484	–390.774	–344.543	13.844
	1400.00	82.410	439.998	377.011	–302.186	88.181	–918.182	–390.994	–340.979	12.722
	1500.00	82.504	445.687	381.402	–293.940	96.427	–962.470	–391.256	–337.398	11.749
	1600.00	82.579	451.014	385.588	–285.685	104.682	–1007.307	–391.561	–333.797	10.897
	1700.00	82.642	456.022	389.585	–277.424	112.943	–1052.662	–442.088	–329.730	10.131
	1800.00	82.693	460.747	393.409	–269.157	121.210	–1098.502	–442.256	–323.116	9.377
	1900.00	82.736	465.219	397.071	–260.886	129.481	–1144.803	–442.431	–316.492	8.701
	2000.00	82.772	469.464	400.586	–252.610	137.757	–1191.539	–442.612	–309.859	8.093

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					
GAS	298.15	90.260	330.938	330.938	-662.746	0.000	-761.415	-662.746	-622.760	109.105
	300.00	90.418	331.497	330.940	-662.579	0.167	-762.028	-662.742	-622.512	108.389
	400.00	96.789	358.472	334.575	-653.187	9.559	-796.576	-662.406	-609.148	79.547
	500.00	100.372	380.491	341.624	-643.313	19.433	-833.558	-661.953	-595.884	62.252
	600.00	102.527	398.997	349.686	-633.159	29.587	-872.557	-661.447	-582.717	50.730
	700.00	103.907	414.912	357.894	-622.833	39.913	-913.272	-660.923	-569.637	42.507
	800.00	104.840	428.852	365.910	-612.393	50.353	-955.474	-660.401	-556.632	36.344
	900.00	105.495	441.240	373.605	-601.874	60.872	-998.990	-659.895	-543.691	31.555
	1000.00	105.973	452.381	380.935	-591.300	71.446	-1043.681	-659.413	-530.806	27.726
	1100.00	106.330	462.499	387.897	-580.684	82.062	-1089.433	-658.959	-517.967	24.596
	1200.00	106.604	471.763	394.505	-570.036	92.710	-1136.152	-658.539	-505.168	21.989
	1300.00	106.818	480.305	400.781	-559.365	103.381	-1183.761	-658.155	-492.403	19.785
	1400.00	106.989	488.228	406.748	-548.674	114.072	-1232.193	-657.811	-479.666	17.897
	1500.00	107.128	495.614	412.429	-537.968	124.778	-1281.389	-657.507	-466.953	16.261
	1600.00	107.242	502.532	417.846	-527.249	135.497	-1331.300	-657.246	-454.258	14.830
	1700.00	107.337	509.036	423.021	-516.520	146.226	-1381.881	-707.206	-441.131	13.554
	1800.00	107.418	515.173	427.972	-505.782	156.964	-1433.095	-706.809	-425.491	12.347
	1900.00	107.487	520.983	432.715	-495.037	167.709	-1484.905	-706.418	-409.873	11.268
	2000.00	107.548	526.498	437.268	-484.285	178.461	-1537.282	-706.036	-394.275	10.297

References

Phase	H / S	C _p
GAS	Ja1	Ja1

47.084

SILICON FLUORIDE (GAS)

SiF[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	32.654	225.782	225.782	-20.083	0.000	-87.400	-20.083	-51.557	9.033
	300.00	32.671	225.984	225.783	-20.023	0.060	-87.818	-20.089	-51.752	9.011
	400.00	33.853	235.541	227.078	-16.697	3.386	-110.914	-20.493	-62.251	8.129
	500.00	34.844	243.208	229.562	-13.260	6.823	-134.864	-21.016	-72.632	7.588
	600.00	35.543	249.627	232.386	-9.738	10.345	-159.514	-21.607	-82.900	7.217
	700.00	36.038	255.145	235.252	-6.158	13.925	-184.759	-22.251	-93.065	6.945
	800.00	36.399	259.982	238.047	-2.535	17.548	-210.521	-22.939	-103.135	6.734
	900.00	36.673	264.286	240.728	1.119	21.202	-236.738	-23.670	-113.116	6.565
	1000.00	36.887	268.161	243.281	4.797	24.880	-263.364	-24.442	-123.014	6.426
	1100.00	37.059	271.685	245.705	8.495	28.578	-290.358	-25.252	-132.832	6.308
	1200.00	37.202	274.916	248.006	12.208	32.291	-317.691	-26.102	-142.575	6.206
	1300.00	37.323	277.899	250.193	15.935	36.018	-345.333	-26.991	-152.245	6.117
	1400.00	37.428	280.668	252.272	19.672	39.755	-373.263	-27.919	-161.846	6.039
	1500.00	37.520	283.254	254.252	23.420	43.503	-401.461	-28.884	-171.378	5.968
	1600.00	37.603	285.678	256.141	27.176	47.259	-429.909	-29.889	-180.845	5.904
	1700.00	37.678	287.960	257.946	30.940	51.023	-458.592	-81.109	-189.802	5.832
	1800.00	37.746	290.116	259.674	34.711	54.794	-487.497	-81.964	-196.171	5.693
	1900.00	37.811	292.158	261.331	38.489	58.572	-516.611	-82.817	-202.492	5.567
	2000.00	37.871	294.099	262.921	42.273	62.356	-545.925	-83.668	-208.769	5.452

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	44.519	256.589	256.589	-587.852	0.000	-664.354	-587.852	-598.279	104.816
	300.00	44.593	256.864	256.589	-587.770	0.082	-664.829	-587.865	-598.344	104.181
	400.00	48.414	270.236	258.387	-583.112	4.740	-691.207	-588.543	-601.735	78.578
	500.00	51.123	281.351	261.899	-578.126	9.726	-718.802	-589.199	-604.956	63.199
	600.00	52.912	290.841	265.951	-572.918	14.934	-747.423	-589.841	-608.047	52.935
	700.00	54.122	299.094	270.109	-567.563	20.289	-776.929	-590.485	-611.031	45.596
	800.00	54.969	306.379	274.197	-562.106	25.746	-807.209	-591.142	-613.921	40.085
	900.00	55.583	312.891	278.141	-556.577	31.275	-838.179	-591.822	-616.728	35.794
	1000.00	56.041	318.772	281.915	-550.995	36.857	-869.767	-592.529	-619.458	32.357
	1100.00	56.391	324.130	285.512	-545.372	42.480	-901.916	-593.269	-622.115	29.542
	1200.00	56.664	329.049	288.938	-539.719	48.133	-934.578	-594.043	-624.704	27.193
	1300.00	56.882	333.594	292.201	-534.041	53.811	-967.713	-594.854	-627.226	25.202
	1400.00	57.058	337.816	295.310	-528.344	59.508	-1001.286	-595.703	-629.685	23.494
	1500.00	57.202	341.757	298.277	-522.631	65.221	-1035.267	-596.592	-632.081	22.011
	1600.00	57.322	345.453	301.111	-516.904	70.948	-1069.629	-597.521	-634.417	20.712
	1700.00	57.422	348.931	303.823	-511.167	76.685	-1104.350	-648.668	-636.247	19.549
	1800.00	57.508	352.216	306.421	-505.420	82.432	-1139.409	-649.454	-635.493	18.442
	1900.00	57.581	355.327	308.914	-499.666	88.186	-1174.788	-650.242	-634.696	17.449
	2000.00	57.644	358.282	311.309	-493.905	93.947	-1210.469	-651.033	-633.858	16.555

References

Phase	H / S	C _p
GAS	Ja1	Ja1

85.081

SILICON TRIFLUORIDE (GAS)

SiF3[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	59.642	282.362	282.362	-1085.330	0.000	-1169.516	-1085.330	-1073.210	188.022
	300.00	59.766	282.731	282.363	-1085.220	0.110	-1170.039	-1085.344	-1073.135	186.849
	400.00	66.242	300.843	284.788	-1078.908	6.422	-1199.245	-1085.975	-1068.965	139.592
	500.00	70.875	316.157	289.570	-1072.037	13.293	-1230.115	-1086.427	-1064.657	111.224
	600.00	73.946	329.369	295.128	-1064.785	20.545	-1262.407	-1086.762	-1060.270	92.305
	700.00	76.028	340.934	300.863	-1057.280	28.050	-1295.934	-1087.031	-1055.832	78.787
	800.00	77.490	351.187	306.525	-1049.600	35.730	-1330.550	-1087.268	-1051.359	68.647
	900.00	78.551	360.379	312.007	-1041.795	43.535	-1366.136	-1087.496	-1046.857	60.758
	1000.00	79.344	368.698	317.267	-1033.899	51.431	-1402.597	-1087.730	-1042.329	54.446
	1100.00	79.952	376.290	322.292	-1025.933	59.397	-1439.852	-1087.979	-1037.777	49.280
	1200.00	80.429	383.268	327.087	-1017.913	67.417	-1477.834	-1088.250	-1033.201	44.974
	1300.00	80.809	389.721	331.660	-1009.850	75.480	-1516.488	-1088.549	-1028.602	41.330
	1400.00	81.119	395.722	336.024	-1001.753	83.577	-1555.764	-1088.880	-1023.978	38.205
	1500.00	81.373	401.327	340.193	-993.628	91.702	-1595.619	-1089.246	-1019.330	35.496
	1600.00	81.586	406.586	344.180	-985.480	99.850	-1636.017	-1089.648	-1014.656	33.125
	1700.00	81.766	411.538	347.998	-977.312	108.018	-1676.926	-1140.266	-1009.509	31.018
	1800.00	81.919	416.216	351.659	-969.128	116.202	-1718.316	-1140.520	-1001.810	29.072
	1900.00	82.052	420.648	355.174	-960.929	124.401	-1760.161	-1140.775	-994.097	27.330
	2000.00	82.167	424.860	358.554	-952.718	132.612	-1802.438	-1141.032	-986.370	25.761

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
GAS	298.15	73.633	282.739	282.739	-1614.940	0.000	-1699.239	-1614.940	-1572.701	275.531
	300.00	73.817	283.195	282.740	-1614.804	0.136	-1699.762	-1614.957	-1572.439	273.786
	400.00	83.102	305.756	285.753	-1606.939	8.001	-1729.241	-1615.641	-1558.152	203.474
	500.00	89.676	325.054	291.730	-1598.278	16.662	-1760.805	-1615.986	-1543.734	161.273
	600.00	94.111	341.822	298.713	-1589.075	25.865	-1794.168	-1616.105	-1529.269	133.135
	700.00	97.190	356.574	305.946	-1579.501	35.439	-1829.103	-1616.081	-1514.797	113.036
	800.00	99.402	369.704	313.111	-1569.665	45.275	-1865.429	-1615.965	-1500.335	97.962
	900.00	101.038	381.511	320.066	-1559.639	55.301	-1902.999	-1615.796	-1485.891	86.239
	1000.00	102.275	392.223	326.754	-1549.471	65.469	-1941.694	-1615.598	-1471.467	76.862
	1100.00	103.227	402.018	333.158	-1539.194	75.746	-1981.413	-1615.389	-1457.064	69.190
	1200.00	103.967	411.033	339.277	-1528.833	86.107	-2022.072	-1615.183	-1442.680	62.798
	1300.00	104.550	419.379	345.121	-1518.406	96.534	-2063.598	-1614.991	-1428.313	57.390
	1400.00	105.013	427.144	350.706	-1507.927	107.013	-2105.928	-1614.822	-1413.959	52.755
	1500.00	105.385	434.402	356.046	-1497.406	117.534	-2149.010	-1614.680	-1399.617	48.739
	1600.00	105.689	441.214	361.159	-1486.852	128.088	-2192.794	-1614.571	-1385.284	45.225
	1700.00	105.943	447.629	366.058	-1476.270	138.670	-2237.239	-1664.676	-1370.509	42.111
	1800.00	106.164	453.691	370.760	-1465.664	149.276	-2282.308	-1664.415	-1353.212	39.269
	1900.00	106.365	459.436	375.277	-1455.038	159.902	-2327.967	-1664.154	-1335.930	36.727
	2000.00	106.558	464.897	379.623	-1444.392	170.548	-2374.186	-1663.892	-1318.662	34.440

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	29.769	198.038	198.038	376.560	0.000	317.515	376.560	342.607	-60.023
	300.00	29.778	198.222	198.038	376.615	0.055	317.149	376.551	342.397	-59.617
	400.00	30.262	206.855	199.212	379.617	3.057	296.875	375.978	331.093	-43.236
	500.00	30.746	213.660	201.445	382.667	6.107	275.838	375.288	319.950	-33.425
	600.00	31.230	219.308	203.964	385.766	9.206	254.182	374.546	308.952	-26.897
	700.00	31.714	224.159	206.511	388.914	12.354	232.003	373.775	298.080	-22.243
	800.00	33.223	228.570	208.998	392.218	15.658	209.362	373.094	287.313	-18.760
	900.00	33.588	232.504	211.395	395.558	18.998	186.304	372.387	276.632	-16.055
	1000.00	33.953	236.062	213.687	398.935	22.375	162.873	371.652	266.032	-13.896
	1100.00	34.318	239.315	215.871	402.349	25.789	139.102	370.891	255.507	-12.133
	1200.00	34.684	242.317	217.951	405.799	29.239	115.019	370.103	245.052	-10.667
	1300.00	35.049	245.107	219.934	409.285	32.725	90.646	369.287	234.664	-9.429
	1400.00	35.414	247.718	221.826	412.809	36.249	66.003	368.445	224.339	-8.370
	1500.00	35.779	250.174	223.635	416.368	39.808	41.107	367.575	214.076	-7.455
	1600.00	36.145	252.495	225.367	419.964	43.404	15.973	366.680	203.872	-6.656
	1700.00	36.510	254.697	227.028	423.597	47.037	-9.388	315.583	194.172	-5.966
	1800.00	36.875	256.794	228.624	427.266	50.706	-34.963	314.866	187.050	-5.428
	1900.00	37.241	258.798	230.160	430.972	54.412	-60.743	314.166	179.969	-4.948
	2000.00	37.606	260.717	231.640	434.715	58.155	-86.720	313.483	172.924	-4.516

References

Phase	H / S	C _p
GAS	Ja1	Ja1

SiH4[g]

SILANE (GAS)

32.117

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	42.827	204.665	204.665	34.309	0.000	-26.712	34.309	56.824	-9.955
	300.00	42.987	204.931	204.666	34.388	0.079	-27.091	34.245	56.964	-9.918
	400.00	51.472	218.472	206.455	39.116	4.807	-48.273	31.038	65.036	-8.493
	500.00	59.145	230.799	210.108	44.654	10.345	-70.745	28.452	73.848	-7.715
	600.00	65.877	242.192	214.518	50.913	16.604	-94.402	26.476	83.122	-7.236
	700.00	71.714	252.796	219.237	57.800	23.491	-119.157	25.039	92.683	-6.916
	800.00	76.761	262.711	224.059	65.231	30.922	-144.938	24.056	102.419	-6.687
	900.00	80.977	272.003	228.875	73.124	38.815	-171.679	23.439	112.255	-6.515
	1000.00	84.498	280.723	233.629	81.403	47.094	-199.320	23.101	122.144	-6.380
	1100.00	87.474	288.920	238.286	90.006	55.697	-227.806	22.970	132.056	-6.271
	1200.00	90.026	296.643	242.831	98.884	64.575	-257.088	22.993	141.973	-6.180
	1300.00	92.148	303.935	247.253	107.996	73.687	-287.120	23.121	151.883	-6.103
	1400.00	93.945	310.832	251.550	117.303	82.994	-317.862	23.316	161.781	-6.036
	1500.00	95.474	317.367	255.722	126.776	92.467	-349.274	23.548	171.663	-5.978
	1600.00	96.781	323.571	259.771	136.390	102.081	-381.324	23.794	181.530	-5.926
	1700.00	97.904	329.473	263.699	146.126	111.817	-413.979	-26.140	191.827	-5.894
	1800.00	98.876	335.097	267.510	155.966	121.657	-447.209	-25.687	204.636	-5.938
	1900.00	99.720	340.466	271.210	165.897	131.588	-480.990	-25.222	217.419	-5.977
	2000.00	100.457	345.600	274.802	175.906	141.597	-515.295	-24.752	230.178	-6.012

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Si2H6[g]

DISILANE (GAS)

62.219

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	79.077	272.660	272.660	80.300	0.000	-0.994	80.300	127.115	-22.270
	300.00	79.423	273.150	272.662	80.447	0.147	-1.498	80.212	127.406	-22.183
	400.00	94.953	298.251	275.979	89.209	8.909	-30.091	76.012	143.799	-18.778
	500.00	106.889	320.766	282.724	99.321	19.021	-61.062	72.798	161.137	-16.834
	600.00	116.867	341.161	290.790	110.522	30.222	-94.174	70.459	179.038	-15.587
	700.00	125.449	359.836	299.339	122.648	42.348	-129.237	68.874	197.269	-14.720
	800.00	132.867	377.084	307.992	135.573	55.273	-166.094	67.924	215.683	-14.083
	900.00	139.235	393.111	316.570	149.187	68.887	-204.613	67.491	234.184	-13.592
	1000.00	144.612	408.068	324.980	163.387	83.087	-244.680	67.462	252.710	-13.200
	1100.00	149.029	422.065	333.177	178.077	97.777	-286.195	67.725	271.224	-12.879
	1200.00	152.509	435.189	341.137	193.162	112.862	-329.064	68.176	289.705	-12.611
	1300.00	155.063	447.503	348.850	208.548	128.248	-373.206	68.717	308.144	-12.381

References

Phase	H / S	C _p
GAS	Nb1	Tk1,e

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	39.042	253.869	253.869	313.800	0.000	238.109	313.800	261.034	-45.732
	300.00	39.080	254.111	253.870	313.872	0.072	237.639	313.785	260.707	-45.393
	400.00	40.200	265.542	255.421	317.849	4.049	211.632	304.819	243.429	-31.789
	500.00	40.393	274.543	258.378	321.883	8.083	184.611	282.478	230.242	-24.053
	600.00	40.220	281.896	261.704	325.915	12.115	156.778	282.258	219.814	-19.137
	700.00	39.875	288.072	265.042	329.921	16.121	128.271	281.934	209.431	-15.628
	800.00	39.623	293.379	268.260	333.896	20.096	99.192	281.514	199.101	-13.000
	900.00	39.413	298.034	271.315	337.847	24.047	69.617	281.014	188.829	-10.959
	1000.00	39.247	302.177	274.198	341.780	27.980	39.602	280.443	178.616	-9.330
	1100.00	39.121	305.912	276.914	345.698	31.898	9.195	279.809	168.463	-8.000
	1200.00	39.027	309.311	279.474	349.605	35.805	-21.569	279.116	158.371	-6.894
	1300.00	38.959	312.432	281.891	353.504	39.704	-52.658	278.369	148.339	-5.960
	1400.00	38.912	315.318	284.177	357.397	43.597	-84.047	277.572	138.366	-5.163
	1500.00	38.883	318.001	286.343	361.287	47.487	-115.715	276.727	128.452	-4.473
	1600.00	38.866	320.510	288.401	365.174	51.374	-147.642	275.836	118.596	-3.872
	1700.00	38.861	322.866	290.360	369.061	55.261	-179.812	224.723	109.244	-3.357
	1800.00	38.865	325.088	292.228	372.947	59.147	-212.211	223.970	102.472	-2.974
	1900.00	38.877	327.189	294.013	376.834	63.034	-244.826	223.216	95.743	-2.632
	2000.00	38.894	329.184	295.723	380.723	66.923	-277.645	222.460	89.054	-2.326

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	54.624	320.980	320.980	92.466	0.000	-3.234	92.466	37.004	-6.483
	300.00	54.662	321.318	320.981	92.567	0.101	-3.828	92.429	36.660	-6.383
	400.00	56.096	337.266	323.146	98.114	5.648	-36.792	74.215	18.948	-2.474
	500.00	56.817	349.869	327.274	103.763	11.297	-71.171	29.392	9.472	-0.990
	600.00	57.226	360.267	331.932	109.467	17.001	-106.693	28.968	5.527	-0.481
	700.00	57.479	369.109	336.627	115.203	22.737	-143.173	28.492	1.657	-0.124
	800.00	57.645	376.796	341.178	120.960	28.494	-180.477	27.969	-2.142	0.140
	900.00	57.760	383.593	345.521	126.731	34.265	-218.503	27.398	-5.871	0.341
	1000.00	57.842	389.683	349.638	132.511	40.045	-257.172	26.781	-9.535	0.498
	1100.00	57.904	395.199	353.533	138.298	45.832	-296.420	26.119	-13.135	0.624
	1200.00	57.951	400.239	357.218	144.091	51.625	-336.196	25.411	-16.673	0.726
	1300.00	57.987	404.879	360.708	149.888	57.422	-376.455	24.658	-20.150	0.810
	1400.00	58.017	409.178	364.019	155.689	63.223	-417.160	23.861	-23.567	0.879
	1500.00	58.041	413.181	367.164	161.491	69.025	-458.280	23.019	-26.926	0.938
	1600.00	58.061	416.928	370.159	167.297	74.831	-499.788	22.132	-30.227	0.987
	1700.00	58.077	420.448	373.014	173.104	80.638	-541.658	-28.976	-33.024	1.015
	1800.00	58.091	423.768	375.743	178.912	86.446	-583.871	-29.725	-33.240	0.965
	1900.00	58.103	426.909	378.354	184.722	92.256	-626.406	-30.479	-33.415	0.919
	2000.00	58.112	429.890	380.857	190.532	98.066	-669.247	-31.238	-33.550	0.876

References

Phase	H / S	C _p
GAS	Ja1	Ja1

408.799

SILICON TRIIODIDE (GAS)

Sil3[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	77.189	378.301	378.301	35.146	0.000	-77.645	35.146	-20.092	3.520
	300.00	77.253	378.779	378.303	35.289	0.143	-78.345	35.101	-20.434	3.558
	400.00	79.623	401.370	381.367	43.147	8.001	-117.401	8.379	-37.718	4.925
	500.00	80.818	419.280	387.221	51.176	16.030	-158.464	-58.163	-42.809	4.472
	600.00	81.500	434.080	393.833	59.294	24.148	-201.154	-58.047	-39.750	3.461
	700.00	81.923	446.677	400.505	67.467	32.321	-245.207	-57.967	-36.707	2.739
	800.00	82.204	457.636	406.976	75.674	40.528	-290.435	-57.927	-33.673	2.199
	900.00	82.399	467.331	413.154	83.905	48.759	-336.692	-57.928	-30.642	1.778
	1000.00	82.540	476.020	419.013	92.152	57.006	-383.867	-57.971	-27.608	1.442
	1100.00	82.645	483.892	424.559	100.412	65.266	-431.869	-58.059	-24.568	1.167
	1200.00	82.724	491.086	429.808	108.680	73.534	-480.623	-58.191	-21.518	0.937
	1300.00	82.786	497.710	434.780	116.956	81.810	-530.068	-58.369	-18.455	0.742
	1400.00	82.835	503.847	439.497	125.237	90.091	-580.149	-58.593	-15.376	0.574
	1500.00	82.875	509.564	443.979	133.523	98.377	-630.823	-58.862	-12.280	0.428
	1600.00	82.906	514.914	448.247	141.812	106.666	-682.050	-59.178	-9.165	0.299
	1700.00	82.933	519.941	452.318	150.104	114.958	-733.795	-109.717	-5.582	0.172
	1800.00	82.954	524.681	456.208	158.398	123.252	-786.028	-109.899	0.549	-0.016
	1900.00	82.972	529.167	459.931	166.695	131.549	-838.723	-110.089	6.690	-0.184
	2000.00	82.987	533.423	463.500	174.993	139.847	-891.854	-110.285	12.842	-0.335

References

Phase	H / S	C _p
GAS	Ja1	Ja1

535.703

SILICON TETRAIODIDE

Sil4

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	108.035	258.153	258.153	-189.535	0.000	-266.503	-189.535	-191.637	33.574
	300.00	108.198	258.822	258.155	-189.335	0.200	-266.981	-189.574	-191.650	33.369
	393.65	116.392	289.283	262.057	-178.818	10.717	-292.694	-223.291	-191.428	25.401
LIQ			49.956		19.665					
	393.65	163.742	339.238	262.057	-159.153	30.382	-292.694	-203.626	-191.428	25.401
	400.00	164.004	341.860	263.303	-158.112	31.423	-294.856	-203.750	-191.230	24.972
	500.00	168.134	378.901	282.841	-141.505	48.030	-330.955	-285.810	-180.288	18.835
	575.80	171.264	402.849	297.095	-128.642	60.893	-360.602	-280.425	-164.678	14.939

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 NBPT= 575.8

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	100.570	416.459	416.459	-110.458	0.000	-234.625	-110.458	-159.759	27.989
	300.00	100.649	417.082	416.461	-110.272	0.186	-235.396	-110.510	-160.065	27.870
	400.00	103.619	446.496	420.452	-100.040	10.418	-278.639	-145.678	-175.013	22.854
	500.00	105.127	469.797	428.072	-89.595	20.863	-324.494	-233.900	-173.827	18.160
	600.00	105.990	489.047	436.676	-79.036	31.422	-372.464	-233.219	-161.876	14.093
	700.00	106.528	505.429	445.357	-68.408	42.050	-422.208	-232.566	-150.038	11.196
	800.00	106.885	519.678	453.776	-57.736	52.722	-473.479	-231.947	-138.291	9.029
	900.00	107.134	532.283	461.812	-47.035	63.423	-526.089	-231.367	-126.619	7.349
	1000.00	107.313	543.580	469.434	-36.312	74.146	-579.892	-230.829	-115.010	6.007
	1100.00	107.447	553.815	476.647	-25.573	84.885	-634.770	-230.335	-103.452	4.913
	1200.00	107.549	563.168	483.473	-14.823	95.635	-690.625	-229.887	-91.937	4.002
	1300.00	107.628	571.780	489.939	-4.064	106.394	-747.379	-229.485	-80.458	3.233
	1400.00	107.691	579.759	496.073	6.702	117.160	-804.960	-229.130	-69.008	2.575
	1500.00	107.741	587.190	501.903	17.473	127.931	-863.312	-228.824	-57.582	2.005
	1600.00	107.782	594.145	507.453	28.250	138.708	-922.383	-228.565	-46.174	1.507
	1700.00	107.816	600.680	512.747	39.029	149.487	-982.127	-278.533	-34.335	1.055
	1800.00	107.844	606.844	517.805	49.812	160.270	-1042.506	-278.146	-19.981	0.580
	1900.00	107.867	612.675	522.646	60.598	171.056	-1103.485	-277.768	-5.649	0.155
	2000.00	107.886	618.209	527.287	71.386	181.844	-1165.031	-277.399	8.663	-0.226

References

Phase	H / S	C _p
GAS	Ja1	Ja1

140.283

TRISILICON TETRANITRIDE (ALPHA)

Si3N4

Phase	T [K]	C _p [————— J / (K mol) —————]	S [(K mol)]	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G [————— kJ / mol —————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-A	298.15	99.502	112.968	112.968	-744.752	0.000	-778.433	-744.752	-647.344	113.412
	300.00	99.757	113.584	112.970	-744.568	0.184	-778.643	-744.787	-646.739	112.607
	400.00	111.003	143.908	117.029	-734.000	10.752	-791.563	-746.421	-613.798	80.154
	500.00	120.502	169.712	125.045	-722.419	22.333	-807.275	-747.556	-580.499	60.644
	600.00	129.374	192.475	134.422	-709.920	34.832	-825.405	-748.154	-547.023	47.623
	700.00	137.632	213.047	144.207	-696.564	48.188	-845.697	-748.230	-513.488	38.317
	800.00	145.202	231.927	154.008	-682.417	62.335	-867.958	-747.826	-479.976	31.339
	900.00	152.042	249.431	163.650	-667.548	77.204	-892.037	-746.994	-446.540	25.917
	1000.00	158.141	265.773	173.054	-652.033	92.719	-917.806	-745.787	-413.218	21.584
	1100.00	163.511	281.103	182.187	-635.945	108.807	-945.158	-744.259	-380.033	18.046
	1200.00	168.179	295.535	191.037	-619.354	125.398	-973.996	-742.464	-346.999	15.104
	1300.00	172.179	309.159	199.604	-602.331	142.421	-1004.238	-740.454	-314.124	12.622
	1400.00	175.554	322.046	207.894	-584.939	159.813	-1035.804	-738.281	-281.409	10.500
	1500.00	178.349	334.256	215.915	-567.240	177.512	-1068.624	-735.993	-248.855	8.666
	1600.00	180.613	345.842	223.676	-549.287	195.465	-1102.634	-733.635	-216.456	7.067
	1700.00	182.397	356.847	231.189	-531.133	213.619	-1137.773	-881.782	-182.865	5.619
	1800.00	183.753	367.313	238.463	-512.822	231.930	-1173.986	-878.728	-141.839	4.116
	1900.00	184.732	377.276	245.509	-494.395	250.357	-1211.219	-875.600	-100.986	2.776
	2000.00	185.390	386.769	252.337	-475.886	268.866	-1249.425	-872.426	-60.299	1.575
	2100.00	185.780	395.825	258.955	-457.326	287.426	-1288.558	-869.235	-19.771	0.492
	2200.00	185.956	404.472	265.375	-438.738	306.014	-1328.576	-866.045	20.605	-0.489

References

Phase	H / S	C _p	Remarks
SOL-A	Ja1	Ja1	Ja1 NDPT= 2151.

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
GAS	298.15	29.912	211.569	211.569	-100.416	0.000	-163.495	-100.416	-127.302	22.303
	300.00	29.918	211.754	211.569	-100.361	0.055	-163.887	-100.425	-127.469	22.194
	400.00	31.074	220.495	212.753	-97.319	3.097	-185.517	-100.991	-136.401	17.812
	500.00	32.404	227.577	215.031	-94.143	6.273	-207.932	-101.624	-145.181	15.167
	600.00	33.443	233.581	217.635	-90.848	9.568	-230.997	-102.285	-153.831	13.392
	700.00	34.230	238.798	220.294	-87.463	12.953	-254.622	-102.976	-162.368	12.116
	800.00	34.835	243.410	222.901	-84.008	16.408	-278.737	-103.699	-170.804	11.152
	900.00	35.311	247.542	225.413	-80.500	19.916	-303.288	-104.454	-179.147	10.397
	1000.00	35.693	251.283	227.816	-76.949	23.467	-328.232	-105.244	-187.404	9.789
	1100.00	36.004	254.700	230.107	-73.364	27.052	-353.534	-106.068	-195.580	9.287
	1200.00	36.262	257.844	232.289	-69.750	30.666	-379.163	-106.928	-203.680	8.866
	1300.00	36.477	260.755	234.368	-66.113	34.303	-405.094	-107.824	-211.707	8.506
	1400.00	36.657	263.465	236.351	-62.456	37.960	-431.307	-108.758	-219.663	8.196
	1500.00	36.810	265.999	238.244	-58.783	41.633	-457.782	-109.730	-227.551	7.924
	1600.00	36.939	268.379	240.054	-55.095	45.321	-484.502	-110.741	-235.373	7.684
	1700.00	37.049	270.622	241.786	-51.395	49.021	-511.453	-161.971	-242.684	7.457
	1800.00	37.144	272.742	243.448	-47.686	52.730	-538.622	-162.839	-247.406	7.180
	1900.00	37.225	274.753	245.043	-43.967	56.449	-565.998	-163.710	-252.081	6.930
	2000.00	37.295	276.664	246.577	-40.241	60.175	-593.569	-164.584	-256.709	6.705
	2100.00	37.357	278.485	248.053	-36.508	63.908	-621.328	-165.464	-261.294	6.499
	2200.00	37.411	280.224	249.476	-32.770	67.646	-649.264	-166.349	-265.837	6.312
	2300.00	37.461	281.889	250.850	-29.026	71.390	-677.370	-167.241	-270.339	6.140
	2400.00	37.508	283.484	252.176	-25.278	75.138	-705.639	-168.138	-274.802	5.981
	2500.00	37.553	285.016	253.459	-21.525	78.891	-734.065	-169.042	-279.228	5.834
	2600.00	37.597	286.490	254.702	-17.767	82.649	-762.640	-169.952	-283.617	5.698
	2700.00	37.643	287.909	255.905	-14.005	86.411	-791.361	-170.869	-287.972	5.571
	2800.00	37.692	289.279	257.073	-10.239	90.177	-820.221	-171.790	-292.292	5.453
	2900.00	37.744	290.603	258.207	-6.467	93.949	-849.215	-172.717	-296.579	5.342
	3000.00	37.802	291.883	259.308	-2.690	97.726	-878.340	-173.648	-300.834	5.238

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
S-LQ	298.15	44.585	41.463	41.463	-910.857	0.000	-923.219	-910.857	-856.444	150.045
	300.00	44.773	41.740	41.464	-910.774	0.083	-923.296	-910.866	-856.106	149.061
	400.00	53.429	55.875	43.333	-905.840	5.017	-928.190	-911.025	-837.813	109.407
	500.00	59.644	68.502	47.128	-900.170	10.687	-934.421	-910.693	-819.540	85.617
	600.00	64.417	79.812	51.649	-893.959	16.898	-941.846	-910.018	-801.367	69.765
	700.00	68.767	90.068	56.416	-887.301	23.556	-950.348	-909.063	-783.331	58.453
	800.00	73.702	99.560	61.222	-880.186	30.671	-959.835	-907.794	-765.451	49.979
	847.00	76.508	103.845	63.469	-876.658	34.199	-964.615	-907.056	-757.109	46.691
S-HQ			0.860		0.728					
	847.00	67.416	104.705	63.469	-875.930	34.927	-964.615	-906.328	-757.109	46.691
	900.00	67.948	108.812	66.019	-872.343	38.514	-970.274	-905.917	-747.785	43.400
	1000.00	68.952	116.023	70.664	-865.498	45.359	-981.521	-905.144	-730.256	38.145
S-HC	1079.00	69.746	121.296	74.180	-860.019	50.838	-990.898	-904.528	-716.463	34.684
			1.850		1.996					
	1079.00	70.609	123.146	74.180	-858.023	52.834	-990.898	-902.532	-716.463	34.684
	1100.00	70.771	124.508	75.128	-856.539	54.318	-993.498	-902.349	-712.844	33.850
	1200.00	71.446	130.696	79.504	-849.427	61.430	-1006.262	-901.485	-695.654	30.281
	1300.00	72.000	136.438	83.666	-842.254	68.603	-1019.622	-900.637	-678.536	27.264
	1400.00	72.467	141.791	87.629	-835.030	75.827	-1033.537	-899.810	-661.483	24.680
	1500.00	72.868	146.805	91.408	-827.762	83.095	-1047.969	-899.009	-644.487	22.443
	1600.00	73.219	151.519	95.019	-820.458	90.399	-1062.888	-898.237	-627.545	20.487
	1700.00	73.533	155.967	98.475	-813.120	97.737	-1078.264	-947.674	-610.202	18.749
	1800.00	73.816	160.179	101.787	-805.752	105.105	-1094.073	-946.742	-590.378	17.132
	1900.00	74.075	164.177	104.966	-798.357	112.500	-1110.293	-945.806	-570.606	15.687
	1996.00	74.306	167.834	107.903	-791.235	119.622	-1126.231	-944.906	-551.670	14.437
			4.793		9.566					
LIQ	1996.00	85.772	172.626	107.903	-781.669	129.188	-1126.231	-935.340	-551.670	14.437
	2000.00	85.772	172.798	108.032	-781.326	129.531	-1126.922	-935.257	-550.902	14.388
	2100.00	85.772	176.983	111.217	-772.749	138.108	-1144.412	-933.185	-531.735	13.226
	2200.00	85.772	180.973	114.298	-764.172	146.685	-1162.312	-931.136	-512.666	12.172
	2300.00	85.772	184.786	117.280	-755.594	155.263	-1180.601	-929.109	-493.690	11.212
	2400.00	85.772	188.436	120.169	-747.017	163.840	-1199.263	-927.104	-474.802	10.334
	2500.00	85.772	191.937	122.970	-738.440	172.417	-1218.283	-925.121	-455.997	9.528
	2600.00	85.772	195.301	125.688	-729.863	180.994	-1237.646	-923.159	-437.271	8.785
	2700.00	85.772	198.538	128.327	-721.286	189.571	-1257.339	-921.219	-418.620	8.099
	2800.00	85.772	201.658	130.890	-712.708	198.149	-1277.350	-919.299	-400.040	7.463
	2900.00	85.772	204.668	133.383	-704.131	206.726	-1297.667	-917.400	-381.529	6.872
	3000.00	85.772	207.575	135.808	-695.554	215.303	-1318.280	-915.519	-363.083	6.322

References

Phase	H / S	C _p	Remarks
S-LQ	Ja1	Ja2	Low Quartz (trigonal)
S-HQ	Ja1	Ja1	High Quartz (hexagonal), MPT= 1696., L= 7.699 kJ
S-HC	Ja1	Ja2	High Cristobalite
LIQ	Ja1	Ja1	

SiO2[CR]

SILICON DIOXIDE (CRISTOBALITE)

60.084

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
[————— kJ / mol —————]										
S-LC	298.15	44.953	43.396	43.396	-908.346	0.000	-921.285	-908.346	-854.509	149.706
	300.00	45.145	43.675	43.397	-908.263	0.083	-921.365	-908.354	-854.175	148.725
	400.00	53.145	57.852	45.276	-903.316	5.030	-926.456	-908.500	-836.079	109.181
	500.00	58.672	70.332	49.065	-897.713	10.633	-932.879	-908.236	-817.997	85.456
	543.00	60.668	75.255	50.946	-895.146	13.200	-936.009	-908.027	-810.245	77.943

References

Phase	H / S	C _p	Remarks
S-LC	Ja1	Ja2	Ja1 Low Cristobalite, TPT= 543. (to High Cr.), L= 1.343 kJ

SiOF2[g]

SILICON DIFLUORIDE OXIDE (GAS)

82.082

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
[————— kJ / mol —————]										
GAS	298.15	53.744	271.258	271.258	-966.504	0.000	-1047.379	-966.504	-950.723	166.563
	300.00	53.864	271.591	271.259	-966.404	0.100	-1047.882	-966.527	-950.625	165.518
	400.00	61.050	288.074	273.457	-960.657	5.847	-1075.887	-967.601	-945.153	123.424
	500.00	66.683	302.340	277.839	-954.253	12.251	-1105.424	-968.369	-939.447	98.143
	600.00	70.539	314.861	282.988	-947.380	19.124	-1136.297	-968.925	-933.608	81.278
	700.00	73.207	325.947	288.349	-940.185	26.319	-1168.348	-969.356	-927.686	69.225
	800.00	75.110	335.854	293.679	-932.764	33.740	-1201.447	-969.718	-921.708	60.181
	900.00	76.514	344.786	298.869	-925.179	41.325	-1235.486	-970.045	-915.687	53.145
	1000.00	77.580	352.905	303.873	-917.472	49.032	-1270.377	-970.359	-909.631	47.514
	1100.00	78.413	360.339	308.673	-909.671	56.833	-1306.045	-970.674	-903.543	42.906
	1200.00	79.078	367.192	313.268	-901.795	64.709	-1342.426	-971.000	-897.426	39.064
	1300.00	79.621	373.544	317.663	-893.860	72.644	-1379.466	-971.344	-891.281	35.812
	1400.00	80.072	379.461	321.868	-885.874	80.630	-1417.120	-971.712	-885.108	33.024
	1500.00	80.454	384.999	325.895	-877.848	88.656	-1455.346	-972.108	-878.909	30.606
	1600.00	80.782	390.202	329.753	-869.785	96.719	-1494.108	-972.534	-872.682	28.490
	1700.00	81.068	395.108	333.454	-861.693	104.811	-1533.376	-1023.173	-865.980	26.608
	1800.00	81.320	399.749	337.010	-853.573	112.931	-1573.121	-1023.443	-856.726	24.862
	1900.00	81.545	404.152	340.428	-845.430	121.074	-1613.318	-1023.712	-847.456	23.298
	2000.00	81.747	408.340	343.720	-837.265	129.239	-1653.944	-1023.981	-838.173	21.891

References

Phase	H / S	C _p
GAS	Ja1	Ja1

59.059

SILICON PHOSPHIDE

SiP

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
SOL	298.15	39.775	32.635	32.635	-66.944	0.000	-76.674	-66.944	-58.818	10.305
	300.00	39.874	32.882	32.636	-66.870	0.074	-76.735	-66.951	-58.768	10.232
	400.00	43.707	44.934	34.253	-62.672	4.272	-80.645	-68.127	-55.791	7.286
	500.00	46.066	54.956	37.420	-58.176	8.768	-85.654	-68.543	-52.657	5.501
	600.00	47.844	63.518	41.073	-53.477	13.467	-91.588	-68.853	-49.449	4.305
	700.00	49.348	71.008	44.826	-48.616	18.328	-98.322	-69.073	-46.196	3.447
	800.00	50.706	77.688	48.524	-43.613	23.331	-105.763	-69.211	-42.918	2.802
	900.00	51.979	83.734	52.105	-38.478	28.466	-113.839	-69.270	-39.627	2.300
	1000.00	53.200	89.274	55.549	-33.218	33.726	-122.493	-69.252	-36.334	1.898

References

Phase	H / S	C _p
SOL	Tk1/Ku1	e

60.151

SILICON SULFIDE (GAS)

SiS[g]

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
GAS	298.15	32.102	223.786	223.786	105.939	0.000	39.217	105.939	54.386	-9.528
	300.00	32.159	223.985	223.787	105.998	0.059	38.803	105.919	54.066	-9.414
	400.00	34.196	233.556	225.078	109.330	3.391	15.908	102.547	37.040	-4.837
	500.00	35.179	241.303	227.573	112.804	6.865	-7.848	99.840	20.953	-2.189
	600.00	35.747	247.772	230.416	116.353	10.414	-32.310	97.436	5.409	-0.471
	700.00	36.119	253.312	233.300	119.947	14.008	-57.371	95.272	-9.757	0.728
	800.00	36.387	258.153	236.111	123.573	17.634	-82.949	93.030	-24.611	1.607
	900.00	36.594	262.451	238.803	127.222	21.283	-108.984	37.911	-38.023	2.207
	1000.00	36.763	266.316	241.364	130.890	24.951	-135.425	37.135	-46.419	2.425
	1100.00	36.907	269.827	243.795	134.574	28.635	-162.235	36.321	-54.735	2.599
	1200.00	37.035	273.043	246.100	138.271	32.332	-189.381	35.471	-62.976	2.741
	1300.00	37.151	276.012	248.288	141.981	36.042	-216.836	34.584	-71.144	2.859
	1400.00	37.258	278.770	250.368	145.701	39.762	-244.576	33.662	-79.242	2.957
	1500.00	37.359	281.344	252.348	149.432	43.493	-272.583	32.704	-87.274	3.039
	1600.00	37.456	283.758	254.237	153.173	47.234	-300.840	31.711	-95.240	3.109
	1700.00	37.548	286.031	256.041	156.923	50.984	-329.330	-19.495	-102.697	3.155
	1800.00	37.638	288.180	257.767	160.682	54.743	-358.042	-20.332	-107.567	3.122
	1900.00	37.725	290.217	259.422	164.451	58.512	-386.963	-21.164	-112.390	3.090
	2000.00	37.810	292.155	261.010	168.227	62.288	-416.082	-21.991	-117.170	3.060

References

Phase	H / S	C _p
GAS	Ja1	Ja1

SiS2

SILICON DISULFIDE

92.217

Phase	T [K]	C _p [————— J / (K mol) —————]	S —(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-	
SOL	298.15	77.482	80.333	80.333	-213.384	0.000	-237.335	-213.384	-212.609	37.248
	300.00	77.503	80.812	80.334	-213.241	0.143	-237.484	-213.362	-212.604	37.018
	400.00	78.631	103.263	83.388	-205.434	7.950	-246.739	-216.840	-212.330	27.727
	500.00	79.760	120.930	89.191	-197.514	15.870	-257.979	-219.004	-210.998	22.043
	600.00	80.888	135.572	95.735	-189.482	23.902	-270.825	-220.500	-209.239	18.216
	700.00	82.016	148.125	102.344	-181.337	32.047	-285.025	-221.423	-207.287	15.468
	800.00	83.144	159.151	108.769	-173.079	40.305	-300.399	-222.393	-205.204	13.398
	900.00	84.273	169.009	114.924	-164.708	48.676	-316.816	-328.996	-200.687	11.648
	1000.00	85.401	177.946	120.787	-156.224	57.160	-334.171	-326.792	-186.548	9.744
	1100.00	86.529	186.139	126.360	-147.628	65.756	-352.381	-324.536	-172.633	8.198
	1200.00	87.657	193.716	131.662	-138.918	74.466	-371.378	-322.222	-158.925	6.918
	1300.00	88.786	200.777	136.710	-130.096	83.288	-391.107	-319.850	-145.413	5.843
	1363.00	89.496	204.996	139.769	-124.480	88.904	-403.889	-318.324	-136.995	5.250
			6.139		8.368					
LIQ	1363.00	100.416	211.135	139.769	-116.112	97.272	-403.889	-309.956	-136.995	5.250
	1400.00	100.416	213.824	141.691	-112.397	100.987	-411.751	-308.653	-132.318	4.937
	1500.00	100.416	220.752	146.733	-102.355	111.029	-433.484	-305.164	-119.844	4.173

References

Phase	H / S	C _p
SOL	Ja1/Ku1	Ja1
LIQ	Ja1	Ja1

107.046

SILICON SELENIDE (GAS)

SiSe[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	33.613	235.250	235.250	202.924	0.000	132.784	202.924	150.995	-26.454
	300.00	33.653	235.458	235.251	202.986	0.062	132.349	202.902	150.672	-26.234
	400.00	35.099	245.367	236.592	206.434	3.510	108.287	201.560	133.456	-17.428
	500.00	35.790	253.281	239.165	209.982	7.058	83.341	194.018	116.698	-12.191
	600.00	36.185	259.844	242.080	213.582	10.658	57.676	191.728	101.449	-8.832
	700.00	36.439	265.442	245.028	217.214	14.290	31.405	189.396	86.586	-6.461
	800.00	36.619	270.320	247.891	220.868	17.944	4.611	187.027	72.060	-4.705
	900.00	36.756	274.642	250.628	224.537	21.613	-22.641	184.620	57.833	-3.357
	1000.00	36.865	278.520	253.226	228.218	25.294	-50.302	182.177	43.877	-2.292
	1100.00	36.957	282.038	255.688	231.909	28.985	-78.333	126.387	35.121	-1.668
	1200.00	37.037	285.257	258.020	235.609	32.685	-106.700	125.320	26.870	-1.170
	1300.00	37.109	288.225	260.231	239.316	36.392	-135.376	124.229	18.710	-0.752
	1400.00	37.174	290.977	262.330	243.030	40.106	-164.338	123.116	10.635	-0.397
	1500.00	37.235	293.544	264.326	246.751	43.827	-193.565	121.980	2.640	-0.092
	1600.00	37.292	295.949	266.228	250.477	47.553	-223.041	120.822	-5.278	0.172
	1700.00	37.347	298.212	268.044	254.209	51.285	-252.750	69.464	-12.676	0.389
	1800.00	37.400	300.348	269.780	257.947	55.023	-282.679	68.488	-17.480	0.507
	1900.00	37.451	302.371	271.442	261.689	58.765	-312.816	67.531	-22.230	0.611
	2000.00	37.500	304.293	273.037	265.437	62.513	-343.150	66.591	-26.930	0.703

References

Phase	H / S	C _p
GAS	Mi1	Mi1

SiTa2

SILICON 2-TANTALUM

389.981

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	69.037	105.437	105.437	-125.520	0.000	-156.956	-125.520	-126.595	22.179
	300.00	69.138	105.864	105.438	-125.392	0.128	-157.151	-125.523	-126.602	22.043
	400.00	73.074	126.352	108.205	-118.261	7.259	-168.802	-125.665	-126.939	16.576
	500.00	75.479	142.932	113.545	-110.826	14.694	-182.292	-125.743	-127.247	13.293
	600.00	77.283	156.859	119.634	-103.185	22.335	-197.300	-125.754	-127.545	11.104
	700.00	78.803	168.889	125.831	-95.379	30.141	-213.601	-125.722	-127.846	9.540
	800.00	80.171	179.502	131.889	-87.429	38.091	-231.031	-125.655	-128.154	8.368
	900.00	81.451	189.020	137.717	-79.348	46.172	-249.465	-125.558	-128.472	7.456
	1000.00	82.676	197.665	143.286	-71.141	54.379	-268.806	-125.434	-128.802	6.728
	1100.00	83.865	205.601	148.595	-62.814	62.706	-288.975	-125.284	-129.146	6.133
	1200.00	85.031	212.948	153.656	-54.369	71.151	-309.907	-125.111	-129.504	5.637
	1300.00	86.179	219.800	158.483	-45.808	79.712	-331.548	-124.930	-129.877	5.219
	1400.00	87.314	226.228	163.095	-37.133	88.387	-353.853	-124.745	-130.265	4.860
	1500.00	88.440	232.290	167.508	-28.346	97.174	-376.781	-124.558	-130.666	4.550
	1600.00	89.560	238.034	171.738	-19.446	106.074	-400.300	-124.370	-131.079	4.279
	1700.00	90.674	243.497	175.799	-10.434	115.086	-424.379	-174.362	-131.057	4.027
	1800.00	91.784	248.711	179.706	-1.311	124.209	-448.991	-173.961	-128.521	3.730
	1900.00	92.890	253.703	183.470	7.923	133.443	-474.114	-173.529	-126.008	3.464
	2000.00	93.994	258.496	187.103	17.267	142.787	-499.725	-173.081	-123.519	3.226

References

Phase	H / S	C _p	Remarks
SOL	C1	e	C1,Tk1 DPT= 2733. (LIQ + Ta5Si3)

237.119

2-SILICON TANTALUM

Si2Ta

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	65.371	56.359	56.359	-119.102	0.000	-135.905	-119.102	-112.308	19.676
	300.00	65.510	56.763	56.360	-118.981	0.121	-136.010	-119.102	-112.266	19.547
	400.00	70.685	76.409	59.003	-112.140	6.962	-142.703	-119.081	-109.990	14.363
	500.00	73.494	92.509	64.144	-104.919	14.183	-151.174	-119.035	-107.722	11.254
	600.00	75.372	106.084	70.032	-97.471	21.631	-161.121	-118.978	-105.465	9.182
	700.00	76.811	117.814	76.039	-89.859	29.243	-172.329	-118.926	-103.217	7.702
	800.00	78.015	128.151	81.920	-82.117	36.985	-184.638	-118.888	-100.975	6.593
	900.00	79.084	137.403	87.580	-74.261	44.841	-197.924	-118.866	-98.738	5.731
	1000.00	80.067	145.787	92.988	-66.303	52.799	-212.090	-118.864	-96.502	5.041
	1100.00	80.995	153.462	98.141	-58.249	60.853	-227.057	-118.882	-94.265	4.476
	1200.00	81.886	160.548	103.050	-50.105	68.997	-242.762	-118.922	-92.025	4.006
	1300.00	82.750	167.137	107.730	-41.873	77.229	-259.150	-118.993	-89.781	3.607
	1400.00	83.595	173.300	112.195	-33.555	85.547	-276.175	-119.096	-87.530	3.266
	1500.00	84.426	179.096	116.464	-25.154	93.948	-293.798	-119.232	-85.271	2.969
	1600.00	85.246	184.571	120.551	-16.671	102.431	-311.984	-119.403	-83.002	2.710
	1700.00	86.057	189.763	124.471	-8.105	110.997	-330.703	-219.965	-79.827	2.453
	1800.00	86.862	194.705	128.237	0.541	119.643	-349.928	-219.759	-71.589	2.077
	1900.00	87.662	199.423	131.860	9.267	128.369	-369.636	-219.513	-63.364	1.742
	2000.00	88.458	203.939	135.352	18.073	137.175	-389.806	-219.234	-55.153	1.440
	2100.00	89.250	208.275	138.722	26.958	146.060	-410.418	-218.929	-46.956	1.168
	2200.00	90.039	212.445	141.979	35.923	155.025	-431.456	-218.601	-38.775	0.921

References

Phase	H / S	C _p	Remarks
SOL	C1	C1	C1 MPT= 2473.

Si3Ta5

3-SILICON 5-TANTALUM

988.996

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f kJ / mol	ΔG _f kJ / mol	log K _f [-]
SOL	298.15	181.341	280.746	280.746	-334.720	0.000	-418.425	-334.720	-339.717	59.517
	300.00	181.537	281.869	280.750	-334.384	0.336	-418.945	-334.730	-339.748	59.155
	400.00	189.781	335.312	287.981	-315.788	18.932	-449.912	-335.377	-341.327	44.573
	500.00	195.698	378.321	301.886	-296.502	38.218	-485.663	-336.014	-342.739	35.806
	600.00	200.700	414.452	317.715	-276.678	58.042	-525.349	-336.507	-344.035	29.951
	700.00	205.268	445.737	333.818	-256.377	78.343	-568.393	-336.865	-345.259	25.764
	800.00	209.607	473.432	349.571	-235.631	99.089	-614.377	-337.082	-346.442	22.620
	900.00	213.811	498.364	364.741	-214.460	120.260	-662.987	-337.152	-347.606	20.175
	1000.00	217.932	521.105	379.257	-192.872	141.848	-713.977	-337.076	-348.771	18.218
	1100.00	221.999	542.067	393.117	-170.875	163.845	-767.149	-336.851	-349.950	16.618
	1200.00	226.028	561.556	406.351	-148.474	186.246	-822.341	-336.477	-351.156	15.285
	1300.00	230.032	579.807	418.999	-125.670	209.050	-879.419	-335.996	-352.398	14.160
	1400.00	234.017	597.000	431.105	-102.468	232.252	-938.267	-335.409	-353.681	13.196
	1500.00	237.987	613.281	442.712	-78.867	255.853	-998.788	-334.722	-355.010	12.363
	1600.00	241.947	628.767	453.861	-54.871	279.849	-1060.897	-333.939	-356.387	11.635
	1700.00	245.899	643.553	464.587	-30.478	304.242	-1124.519	-483.597	-356.476	10.953
	1800.00	249.844	657.720	474.926	-5.691	329.029	-1189.587	-481.974	-349.044	10.129
	1900.00	253.785	671.334	484.907	19.490	354.210	-1256.044	-480.157	-341.708	9.394
	2000.00	257.721	684.452	494.559	45.066	379.786	-1323.837	-478.181	-334.471	8.735

References

Phase	H / S	C _p	Remarks
SOL	C1	e	C1,Tk1 TPT= 1973. / MPT= 2773.

260.124

SILICON THORIUM

SiTh

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	47.257	58.158	58.158	-128.030	0.000	-145.370	-128.030	-123.841	21.696
	300.00	47.341	58.450	58.159	-127.942	0.088	-145.478	-128.030	-123.815	21.558
	400.00	50.627	72.566	60.061	-123.028	5.002	-152.054	-128.039	-122.409	15.985
	500.00	52.702	84.099	63.750	-117.856	10.174	-159.905	-128.073	-120.998	12.641
	600.00	54.299	93.853	67.975	-112.503	15.527	-168.815	-128.153	-119.577	10.410
	700.00	55.670	102.329	72.291	-107.003	21.027	-178.633	-128.284	-118.138	8.816
	800.00	56.921	109.845	76.524	-101.373	26.657	-189.249	-128.472	-116.676	7.618
	900.00	58.103	116.618	80.609	-95.621	32.409	-200.578	-128.718	-115.187	6.685
	1000.00	59.241	122.799	84.523	-89.754	38.276	-212.553	-129.024	-113.668	5.937
	1100.00	60.351	128.498	88.265	-83.774	44.256	-225.121	-129.390	-112.115	5.324
	1200.00	61.442	133.796	91.841	-77.684	50.346	-238.239	-129.818	-110.527	4.811
	1300.00	62.519	138.756	95.261	-71.486	56.544	-251.869	-130.307	-108.900	4.376
	1400.00	63.586	143.428	98.536	-65.181	62.849	-265.981	-130.859	-107.232	4.001
	1500.00	64.646	147.852	101.678	-58.769	69.261	-280.547	-131.472	-105.524	3.675
	1600.00	65.700	152.057	104.696	-52.252	75.778	-295.544	-132.147	-103.772	3.388
	1700.00	66.750	156.072	107.601	-45.629	82.401	-310.952	-185.878	-101.421	3.116
	1800.00	67.796	159.917	110.401	-38.902	89.128	-326.753	-186.473	-96.435	2.798
	1900.00	68.840	163.611	113.105	-32.070	95.960	-342.930	-186.963	-91.419	2.513

References

Phase	H / S	C _p
SOL	Ra3	e

Si2Th

2-SILICON THORIUM

288.209

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	67.266	82.006	82.006	-174.054	0.000	-198.504	-174.054	-171.365	30.022
	300.00	67.411	82.423	82.008	-173.929	0.125	-198.656	-174.054	-171.348	29.834
	400.00	72.959	102.664	84.730	-166.880	7.174	-207.946	-174.051	-170.446	22.258
	500.00	76.212	119.318	90.032	-159.411	14.643	-219.070	-174.067	-169.544	17.712
	600.00	78.562	133.430	96.119	-151.667	22.387	-231.725	-174.132	-168.634	14.681
	700.00	80.485	145.688	102.343	-143.713	30.341	-245.694	-174.257	-167.709	12.515
	800.00	82.182	156.548	108.453	-135.578	38.476	-260.816	-174.449	-166.761	10.888
	900.00	83.746	166.319	114.349	-127.281	46.773	-276.968	-174.711	-165.785	9.622
	1000.00	85.228	175.220	119.997	-118.831	55.223	-294.051	-175.044	-164.776	8.607
	1100.00	86.657	183.410	125.395	-110.237	63.817	-311.988	-175.451	-163.730	7.775
	1200.00	88.049	191.010	130.550	-101.501	72.553	-330.714	-175.933	-162.644	7.080
	1300.00	89.415	198.112	135.477	-92.628	81.426	-350.173	-176.488	-161.514	6.490
	1400.00	90.763	204.788	140.191	-83.619	90.435	-370.322	-177.120	-160.339	5.982
	1500.00	92.097	211.095	144.710	-74.476	99.578	-391.119	-177.826	-159.117	5.541
	1600.00	93.420	217.081	149.048	-65.200	108.854	-412.530	-178.608	-157.844	5.153
	1700.00	94.736	222.785	153.219	-55.792	118.262	-434.526	-282.638	-155.518	4.778
	1800.00	96.044	228.237	157.236	-46.253	127.801	-457.079	-283.140	-148.025	4.296
	1900.00	97.348	233.464	161.111	-36.583	137.471	-480.165	-283.512	-140.508	3.863

References

Phase	H / S	C _p
SOL	Ra3	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	121.734	163.176	163.176	-284.930	0.000	-333.581	-284.930	-274.606	48.110
	300.00	121.922	163.930	163.178	-284.705	0.225	-333.883	-284.931	-274.542	47.802
	400.00	129.526	200.144	168.064	-272.098	12.832	-352.156	-284.971	-271.074	35.399
	500.00	134.574	229.616	177.518	-258.881	26.049	-373.689	-285.096	-267.588	27.955
	600.00	138.616	254.519	188.329	-245.216	39.714	-397.928	-285.350	-264.065	22.989
	700.00	142.183	276.159	199.364	-231.173	53.757	-424.485	-285.752	-260.488	19.438
	800.00	145.496	295.363	210.186	-216.788	68.142	-453.079	-286.312	-256.842	16.770
	900.00	148.662	312.684	220.628	-202.079	82.851	-483.495	-287.035	-253.117	14.691
	1000.00	151.737	328.507	230.636	-187.058	97.872	-515.566	-287.926	-249.302	13.022
	1100.00	154.752	343.111	240.205	-171.734	113.196	-549.156	-288.985	-245.390	11.653
	1200.00	157.726	356.704	249.354	-156.109	128.821	-584.154	-290.214	-241.374	10.507
	1300.00	160.672	369.445	258.106	-140.189	144.741	-620.468	-291.614	-237.248	9.533
	1400.00	163.597	381.460	266.492	-123.976	160.954	-658.019	-293.186	-233.008	8.694
	1500.00	166.506	392.846	274.539	-107.470	177.460	-696.739	-294.930	-228.650	7.962
	1600.00	169.404	403.685	282.275	-90.675	194.255	-736.570	-296.847	-224.170	7.318
	1700.00	172.293	414.041	289.724	-73.590	211.340	-777.460	-407.740	-218.345	6.709
	1800.00	175.175	423.971	296.908	-56.216	228.714	-819.364	-409.613	-207.148	6.011
	1900.00	178.051	433.519	303.848	-38.555	246.375	-862.242	-411.198	-195.856	5.384

References

Phase	H / S	C _p
SOL	Ra3	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	181.742	213.384	213.384	-486.181	0.000	-549.801	-486.181	-473.993	83.042
	300.00	182.117	214.509	213.387	-485.844	0.337	-550.197	-486.181	-473.918	82.516
	400.00	196.518	269.096	220.732	-466.835	19.346	-574.474	-486.187	-469.829	61.353
	500.00	205.108	313.933	235.024	-446.726	39.455	-603.693	-486.256	-465.734	48.655
	600.00	211.410	351.908	251.420	-425.888	60.293	-637.033	-486.466	-461.612	40.187
	700.00	216.632	384.899	268.183	-404.480	81.701	-673.909	-486.849	-457.442	34.135
	800.00	221.278	414.134	284.634	-382.581	103.600	-713.888	-487.421	-453.204	29.591
	900.00	225.590	440.449	300.509	-360.235	125.946	-756.639	-488.192	-448.883	26.052
	1000.00	229.693	464.431	315.719	-337.469	148.712	-801.900	-489.165	-444.465	23.216
	1100.00	233.661	486.510	330.255	-314.301	171.880	-849.462	-490.346	-439.940	20.891
	1200.00	237.536	507.008	344.140	-290.740	195.441	-899.150	-491.737	-435.298	18.948
	1300.00	241.347	526.172	357.414	-266.796	219.385	-950.819	-493.338	-430.531	17.299
	1400.00	245.109	544.195	370.118	-242.473	243.708	-1004.346	-495.152	-425.633	15.881
	1500.00	248.837	561.233	382.296	-217.775	268.406	-1059.625	-497.178	-420.598	14.647
	1600.00	252.539	577.411	393.989	-192.706	293.475	-1116.564	-499.418	-415.420	13.562
	1700.00	256.219	592.832	405.236	-167.268	318.913	-1175.082	-761.208	-407.536	12.522
	1800.00	259.884	607.581	416.071	-141.463	344.718	-1235.108	-762.808	-386.684	11.221
	1900.00	263.536	621.730	426.525	-115.292	370.889	-1296.578	-764.042	-365.753	10.055

References

Phase	H / S	C _p
SOL	Ra3	e

75.966

SILICON TITANIUM

SiTi

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [- -]
SOL	298.15	45.403	48.953	48.953	-129.704	0.000	-144.299	-129.704	-129.517	22.691
	300.00	45.499	49.234	48.954	-129.620	0.084	-144.390	-129.703	-129.516	22.551
	400.00	49.285	62.896	50.791	-124.862	4.842	-150.020	-129.657	-129.460	16.906
	500.00	51.651	74.163	54.372	-119.808	9.896	-156.890	-129.582	-129.419	13.520
	600.00	53.459	83.746	58.489	-114.550	15.154	-164.797	-129.485	-129.395	11.265
	700.00	55.002	92.105	62.706	-109.125	20.579	-173.598	-129.382	-129.389	9.655
	800.00	56.404	99.542	66.854	-103.554	26.150	-183.187	-129.291	-129.396	8.449
	900.00	57.725	106.262	70.865	-97.847	31.857	-193.483	-129.225	-129.414	7.511
	1000.00	58.994	112.410	74.717	-92.011	37.693	-204.421	-129.193	-129.437	6.761
	1100.00	60.231	118.091	78.405	-86.049	43.655	-215.949	-129.192	-129.461	6.148
	1200.00	61.445	123.384	81.935	-79.965	49.739	-228.026	-133.219	-129.366	5.631
	1300.00	62.643	128.350	85.316	-73.761	55.943	-240.615	-132.743	-129.064	5.186
	1400.00	63.830	133.036	88.559	-67.437	62.267	-253.687	-132.252	-128.799	4.806
	1500.00	65.008	137.480	91.674	-60.995	68.709	-267.214	-131.753	-128.570	4.477
	1600.00	66.179	141.712	94.670	-54.436	75.268	-281.176	-131.253	-128.374	4.191
	1700.00	67.346	145.760	97.557	-47.759	81.945	-295.551	-180.938	-127.762	3.926
	1800.00	68.508	149.642	100.343	-40.967	88.737	-310.322	-180.232	-124.655	3.617
	1900.00	69.668	153.377	103.037	-34.058	95.646	-325.474	-179.505	-121.587	3.343
	2000.00	70.825	156.980	105.645	-27.033	102.671	-340.993	-192.892	-118.113	3.085
	2033.00	71.206	158.142	106.487	-24.690	105.014	-346.193	-192.620	-116.881	3.003

References

Phase	H / S	C _p	Remarks
SOL	Hu1/Ku1	e	Hu1 DPT= 2033. (LIQ + Ti5Si3)

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	65.489	61.086	61.086	-134.306	0.000	-152.519	-134.306	-132.126	23.148
	300.00	65.647	61.492	61.088	-134.185	0.121	-152.632	-134.305	-132.112	23.003
	400.00	71.797	81.310	63.748	-127.281	7.025	-159.805	-134.235	-131.391	17.158
	500.00	75.588	97.764	68.953	-119.901	14.405	-168.782	-134.113	-130.693	13.653
	600.00	78.450	111.807	74.953	-112.194	22.112	-179.278	-133.944	-130.024	11.320
	700.00	80.873	124.086	81.113	-104.225	30.081	-191.085	-133.746	-129.386	9.655
	800.00	83.063	135.030	87.181	-96.027	38.279	-204.051	-133.536	-128.777	8.408
	900.00	85.117	144.933	93.056	-87.617	46.689	-218.057	-133.328	-128.195	7.440
	1000.00	87.086	154.004	98.704	-79.006	55.300	-233.010	-133.131	-127.635	6.667
	1100.00	89.000	162.394	104.117	-70.201	64.105	-248.835	-132.943	-127.095	6.035
	1200.00	90.876	170.219	109.303	-61.207	73.099	-265.470	-136.758	-126.452	5.504
	1300.00	92.727	177.566	114.275	-52.027	82.279	-282.863	-136.048	-125.622	5.048
	1400.00	94.558	184.505	119.045	-42.663	91.643	-300.970	-135.300	-124.848	4.658
	1500.00	96.374	191.091	123.631	-33.116	101.190	-319.752	-134.521	-124.128	4.323
	1600.00	98.180	197.368	128.045	-23.388	110.918	-339.177	-133.719	-123.461	4.031
	1700.00	99.978	203.374	132.300	-13.480	120.826	-359.217	-233.255	-121.951	3.747
	1800.00	101.769	209.140	136.410	-3.393	130.913	-379.844	-231.975	-115.441	3.350
	1813.00	102.001	209.873	136.934	-2.068	132.238	-382.568	-231.802	-114.600	3.302

References

Phase	H / S	C _p	Remarks
SOL	Hu1/Ku1	e	Hu1 MPT= 1813.

323.657

3-SILICON 5-TITANIUM

Si3Ti5

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [- -]
SOL	298.15	187.194	217.986	217.986	-579.066	0.000	-644.059	-579.066	-581.371	101.854
	300.00	187.555	219.145	217.990	-578.719	0.347	-644.463	-579.062	-581.386	101.228
	400.00	201.794	275.253	225.543	-559.182	19.884	-669.283	-578.837	-582.192	76.027
	500.00	210.790	321.304	240.228	-538.528	40.538	-699.180	-578.522	-583.066	60.912
	600.00	217.721	360.369	257.078	-517.091	61.975	-733.313	-578.140	-584.010	50.843
	700.00	223.678	394.387	274.315	-495.015	84.051	-771.086	-577.773	-585.018	43.655
	800.00	229.116	424.614	291.248	-472.373	106.693	-812.064	-577.511	-586.072	38.267
	900.00	234.251	451.899	307.606	-449.202	129.864	-855.912	-577.426	-587.150	34.077
	1000.00	239.199	476.837	323.300	-425.528	153.538	-902.366	-577.553	-588.225	30.726
	1100.00	244.025	499.863	338.318	-401.366	177.700	-951.215	-577.885	-589.278	27.982
	1200.00	248.767	521.299	352.683	-376.726	202.340	-1002.286	-598.398	-589.697	25.669
	1300.00	253.450	541.397	366.434	-351.615	227.451	-1055.431	-596.446	-589.051	23.668
	1400.00	258.090	560.349	379.615	-326.038	253.028	-1110.527	-594.465	-588.556	21.959
	1500.00	262.699	578.313	392.268	-299.998	279.068	-1167.468	-592.490	-588.203	20.483
	1600.00	267.284	595.414	404.434	-273.499	305.567	-1226.161	-590.558	-587.981	19.196
	1700.00	271.851	611.755	416.152	-246.542	332.524	-1286.525	-739.240	-586.536	18.022
	1800.00	276.403	627.422	427.457	-219.129	359.937	-1348.489	-736.824	-577.623	16.762
	1900.00	280.943	642.488	438.381	-191.262	387.804	-1411.989	-734.427	-568.845	15.639
	2000.00	285.474	657.014	448.951	-162.941	416.125	-1476.969	-802.724	-557.966	14.573
	2100.00	289.998	671.052	459.195	-134.167	444.899	-1543.376	-799.891	-545.796	13.576
	2200.00	294.515	684.647	469.136	-104.941	474.125	-1611.164	-796.606	-533.772	12.673
	2300.00	299.027	697.838	478.794	-75.264	503.802	-1680.292	-792.870	-521.907	11.853
	2393.00	303.220	709.774	487.540	-47.260	531.806	-1745.748	-788.990	-511.026	11.155

References

Phase	H / S	C _p	Remarks
SOL	Hu1/Ku1	e	Hu1 MPT= 2393.

SiU

SILICON URANIUM

266.114

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	50.408	66.526	66.526	-84.517	0.000	-104.352	-84.517	-83.746	14.672
	300.00	50.591	66.838	66.527	-84.424	0.093	-104.475	-84.512	-83.741	14.581
	400.00	57.079	82.411	68.606	-78.995	5.522	-111.959	-84.074	-83.544	10.910
	500.00	60.170	95.516	72.715	-73.116	11.401	-120.874	-83.556	-83.472	8.720
	600.00	61.924	106.655	77.467	-67.004	17.513	-130.997	-83.155	-83.496	7.269
	700.00	63.046	116.290	82.340	-60.752	23.765	-142.155	-82.986	-83.570	6.236
	800.00	63.831	124.763	87.124	-54.406	30.111	-154.216	-83.134	-83.648	5.462
	900.00	64.421	132.317	91.734	-47.992	36.525	-167.077	-83.671	-83.684	4.857
	1000.00	64.890	139.129	96.138	-41.526	42.991	-180.655	-87.066	-83.473	4.360
	1100.00	65.279	145.333	100.333	-35.017	49.500	-194.883	-92.021	-82.862	3.935
	1200.00	65.614	151.027	104.323	-28.472	56.045	-209.705	-92.003	-82.031	3.571
	1300.00	65.910	156.291	108.121	-21.896	62.621	-225.074	-91.997	-81.200	3.263
	1400.00	66.180	161.186	111.738	-15.291	69.226	-240.951	-92.004	-80.369	2.999
	1500.00	66.428	165.760	115.189	-8.660	75.857	-257.300	-101.460	-78.931	2.749
	1600.00	66.662	170.055	118.485	-2.006	82.511	-274.093	-102.462	-77.397	2.527
	1700.00	66.883	174.103	121.639	4.672	89.189	-291.303	-153.659	-75.352	2.315
	1800.00	67.095	177.932	124.661	11.371	95.888	-308.907	-154.470	-70.722	2.052

References

Phase	H / S	C _p
SOL	Ra1	Ra1,e

SiU3

SILICON 3-URANIUM

742.172

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	107.876	174.013	174.013	-134.001	0.000	-185.883	-134.001	-135.288	23.702
	300.00	108.310	174.681	174.015	-133.801	0.200	-186.205	-133.992	-135.296	23.557
	400.00	123.564	208.243	178.487	-122.098	11.903	-205.396	-133.017	-135.859	17.741
	500.00	130.624	236.662	187.360	-109.350	24.651	-227.681	-131.793	-136.713	14.282
	600.00	134.460	260.849	197.644	-96.078	37.923	-252.587	-130.901	-137.790	11.996
	700.00	136.772	281.763	208.201	-82.508	51.493	-279.742	-130.682	-138.966	10.370
	800.00	138.273	300.131	218.568	-68.750	65.251	-308.855	-131.390	-140.114	9.149
	900.00	139.302	316.480	228.555	-54.868	79.133	-339.701	-133.237	-141.106	8.190
	1000.00	140.038	331.197	238.096	-40.899	93.102	-372.097	-143.634	-141.331	7.382
	1100.00	140.583	344.571	247.177	-26.867	107.134	-405.896	-158.682	-140.338	6.664
	1200.00	140.997	356.822	255.811	-12.787	121.214	-440.974	-158.786	-138.666	6.036

References

Phase	H / S	C _p
SOL	Nb1	e

294.200

2-SILICON URANIUM

Si2U

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	71.157	82.006	82.006	-129.704	0.000	-154.154	-129.704	-127.938	22.414
	300.00	71.397	82.447	82.008	-129.572	0.132	-154.306	-129.697	-127.927	22.274
	400.00	79.979	104.331	84.933	-121.945	7.759	-163.677	-129.183	-127.407	16.638
	500.00	84.170	122.675	90.700	-113.716	15.988	-175.054	-128.595	-127.033	13.271
	600.00	86.631	138.255	97.360	-105.167	24.537	-188.120	-128.133	-126.767	11.036
	700.00	88.277	151.741	104.188	-96.417	33.287	-202.635	-127.915	-126.560	9.444
	800.00	89.487	163.611	110.888	-87.526	42.178	-218.415	-128.026	-126.364	8.251
	900.00	90.444	174.208	117.346	-78.528	51.176	-235.315	-128.540	-126.129	7.320
	1000.00	91.245	183.780	123.518	-69.442	60.262	-253.222	-131.926	-125.650	6.563
	1100.00	91.942	192.510	129.399	-60.282	69.422	-272.043	-136.884	-124.770	5.925
	1200.00	92.570	200.537	134.997	-51.056	78.648	-291.701	-136.885	-123.669	5.383
	1300.00	93.149	207.970	140.328	-41.770	87.934	-312.131	-136.911	-122.567	4.925
	1400.00	93.692	214.893	145.410	-32.428	97.276	-333.278	-136.964	-121.462	4.532
	1500.00	94.208	221.375	150.260	-23.032	106.672	-355.095	-146.480	-119.746	4.170
	1600.00	94.705	227.471	154.897	-13.587	116.117	-377.540	-147.556	-117.929	3.850
	1700.00	95.186	233.227	159.337	-4.092	125.612	-400.577	-249.019	-115.149	3.538
	1800.00	95.654	238.681	163.595	5.450	135.154	-424.175	-249.707	-107.255	3.112

References

Phase	H / S	C _p
SOL	Ra1	Ra1,e

Si2U3

2-SILICON 3-URANIUM

770.258

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	130.508	197.485	197.485	-170.707	0.000	-229.587	-170.707	-173.382	30.376
	300.00	130.999	198.294	197.487	-170.465	0.242	-229.953	-170.693	-173.398	30.191
	400.00	148.347	238.708	202.880	-156.376	14.331	-251.859	-169.453	-174.468	22.783
	500.00	156.507	272.786	213.549	-141.089	29.618	-277.482	-167.971	-175.895	18.376
	600.00	161.050	301.757	225.898	-125.192	45.515	-306.246	-166.829	-177.596	15.461
	700.00	163.886	326.812	238.566	-108.935	61.772	-337.703	-166.373	-179.438	13.390
	800.00	165.812	348.829	251.000	-92.444	78.263	-371.507	-166.856	-181.284	11.837
	900.00	167.208	368.443	262.980	-75.790	94.917	-407.389	-168.492	-183.002	10.621
	1000.00	168.276	386.118	274.424	-59.014	111.693	-445.131	-178.691	-183.975	9.610
	1100.00	169.130	402.198	285.320	-42.142	128.565	-484.559	-193.555	-183.750	8.726
	1200.00	169.837	416.945	295.683	-25.192	145.515	-525.527	-193.489	-182.861	7.960
	1300.00	170.441	430.564	305.541	-8.178	162.529	-567.911	-193.443	-181.978	7.312
	1400.00	170.970	443.215	314.929	8.893	179.600	-611.607	-193.425	-181.097	6.757
	1500.00	171.445	455.027	323.879	26.014	196.721	-656.526	-221.738	-178.397	6.212
	1600.00	171.877	466.106	332.426	43.181	213.888	-702.588	-224.675	-175.412	5.727
	1700.00	172.276	476.538	340.599	60.389	231.096	-749.725	-328.006	-171.349	5.265
	1800.00	172.650	486.395	348.428	77.635	248.342	-797.877	-330.570	-162.059	4.703

References

Phase	H / S	C _p
SOL	Ra1	Ra1,e

322.285

3-SILICON URANIUM

Si3U

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	91.847	106.274	106.274	-132.214	0.000	-163.899	-132.214	-132.072	23.138
	300.00	92.145	106.843	106.275	-132.044	0.170	-164.097	-132.206	-132.071	22.996
	400.00	102.836	135.022	110.045	-122.223	9.991	-176.232	-131.621	-132.108	17.251
	500.00	108.131	158.596	117.466	-111.649	20.565	-190.947	-130.966	-132.306	13.822
	600.00	111.302	178.612	126.031	-100.666	31.548	-207.833	-130.447	-132.627	11.546
	700.00	113.469	195.941	134.809	-89.421	42.793	-226.580	-130.183	-133.015	9.926
	800.00	115.102	211.204	143.423	-77.989	54.225	-246.952	-130.262	-133.419	8.711
	900.00	116.425	224.840	151.725	-66.411	65.803	-268.767	-130.756	-133.788	7.765
	1000.00	117.554	237.166	159.663	-54.711	77.503	-291.877	-134.137	-133.914	6.995
	1100.00	118.557	248.418	167.227	-42.904	89.310	-316.164	-139.105	-133.640	6.346
	1200.00	119.474	258.774	174.430	-31.002	101.212	-341.531	-139.128	-133.142	5.796
	1300.00	120.331	268.371	181.292	-19.012	113.202	-367.894	-139.192	-132.641	5.330
	1400.00	121.143	277.318	187.835	-6.938	125.276	-395.183	-139.297	-132.133	4.930
	1500.00	121.924	285.703	194.083	5.216	137.430	-423.338	-148.880	-131.010	4.562
	1600.00	122.679	293.596	200.058	17.446	149.660	-452.307	-150.037	-129.781	4.237
	1700.00	123.416	301.055	205.782	29.751	161.965	-482.043	-301.773	-127.138	3.906
	1800.00	124.137	308.130	211.273	42.129	174.343	-512.506	-302.345	-116.849	3.391

References

Phase	H / S	C _p
SOL	Nb1/Ra1	Ra1,e

Si5U3

5-SILICON 3-URANIUM

854.514

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
SOL	298.15	192.662	231.375	231.375	-354.385	0.000	-423.370	-354.385	-350.331	61.376
	300.00	193.326	232.569	231.379	-354.028	0.357	-423.799	-354.367	-350.306	60.994
	400.00	216.995	291.895	239.307	-333.350	21.035	-450.108	-352.906	-349.153	45.595
	500.00	228.472	341.679	254.945	-311.018	43.367	-481.858	-351.215	-348.413	36.398
	600.00	235.149	383.972	273.015	-287.811	66.574	-518.194	-349.894	-347.986	30.295
	700.00	239.561	420.572	291.540	-264.062	90.323	-558.463	-349.292	-347.728	25.948
	800.00	242.765	452.780	309.722	-239.939	114.446	-602.163	-349.667	-347.492	22.689
	900.00	245.267	481.523	327.243	-215.533	138.852	-648.904	-351.234	-347.139	20.147
	1000.00	247.333	507.475	343.989	-190.900	163.485	-698.374	-361.406	-346.047	18.076
	1100.00	249.114	531.134	359.943	-166.075	188.310	-750.322	-376.283	-343.757	16.324
	1200.00	250.701	552.879	375.127	-141.083	213.302	-804.537	-376.272	-340.801	14.835
	1300.00	252.151	573.003	389.584	-115.940	238.445	-860.844	-376.323	-337.843	13.575
	1400.00	253.503	591.740	403.362	-90.656	263.729	-919.092	-376.443	-334.879	12.494
	1500.00	254.780	609.274	416.511	-65.242	289.143	-979.152	-404.938	-330.085	11.495
	1600.00	256.002	625.756	429.079	-39.702	314.683	-1040.912	-408.098	-324.992	10.610
	1700.00	257.181	641.312	441.110	-14.043	340.342	-1104.272	-662.227	-317.465	9.755
	1800.00	258.327	656.044	452.645	11.733	366.118	-1169.147	-664.422	-297.121	8.622

References

Phase	H / S	C _p
SOL	Ra1	Ra1,e

SiV3

SILICON 3-VANADIUM

180.910

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
SOL	298.15	90.968	112.968	112.968	-104.600	0.000	-138.281	-104.600	-106.811	18.713
	300.00	91.098	113.531	112.970	-104.432	0.168	-138.491	-104.607	-106.824	18.600
	400.00	96.303	140.521	116.614	-95.037	9.563	-151.246	-105.034	-107.501	14.038
	500.00	99.695	162.394	123.652	-85.229	19.371	-166.426	-105.489	-108.065	11.289
	600.00	102.372	180.814	131.684	-75.122	29.478	-183.610	-105.925	-108.539	9.449
	700.00	104.711	196.774	139.867	-64.766	39.834	-202.507	-106.344	-108.941	8.129
	800.00	106.871	210.898	147.880	-54.185	50.415	-222.904	-106.774	-109.284	7.135
	900.00	108.927	223.605	155.600	-43.395	61.205	-244.640	-107.257	-109.569	6.359
	1000.00	110.917	235.185	162.988	-32.402	72.198	-267.588	-107.870	-109.795	5.735
	1100.00	112.866	245.849	170.042	-21.213	83.387	-291.646	-108.640	-109.951	5.221
	1200.00	114.785	255.752	176.777	-9.830	94.770	-316.732	-109.589	-110.030	4.789
	1300.00	116.684	265.015	183.212	1.744	106.344	-342.775	-110.739	-110.022	4.421
	1400.00	118.568	273.731	189.369	13.506	118.106	-369.717	-112.110	-109.917	4.101

References

Phase	H / S	C _p	Remarks
SOL	Tk1	C1	Tk1 DPT= 2243. (LIQ + V5Si3)

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[—————]
SOL	298.15	64.344	58.994	58.994	-150.624	0.000	-168.213	-150.624	-148.371	25.994
	300.00	64.496	59.393	58.996	-150.505	0.119	-168.323	-150.625	-148.357	25.831
	400.00	70.237	78.828	61.606	-143.735	6.889	-175.267	-150.667	-147.594	19.274
	500.00	73.521	94.880	66.703	-136.536	14.088	-183.976	-150.687	-146.823	15.339
	600.00	75.838	108.499	72.563	-129.063	21.561	-194.162	-150.689	-146.050	12.715
	700.00	77.697	120.333	78.560	-121.383	29.241	-205.616	-150.683	-145.278	10.841
	800.00	79.313	130.815	84.449	-113.531	37.093	-218.183	-150.681	-144.506	9.435
	900.00	80.787	140.243	90.134	-105.525	45.099	-231.744	-150.702	-143.733	8.342
	1000.00	82.174	148.827	95.580	-97.377	53.247	-246.204	-150.771	-142.956	7.467
	1100.00	83.503	156.722	100.784	-89.092	61.532	-261.487	-150.899	-142.168	6.751
	1200.00	84.793	164.043	105.754	-80.677	69.947	-277.529	-151.093	-141.367	6.154
	1300.00	86.055	170.880	110.504	-72.135	78.489	-294.279	-151.361	-140.546	5.647
	1400.00	87.298	177.303	115.048	-63.467	87.157	-311.692	-151.711	-139.701	5.212
	1500.00	88.525	183.368	119.403	-54.676	95.948	-329.728	-152.150	-138.829	4.834
	1600.00	89.741	189.120	123.582	-45.762	104.862	-348.355	-152.687	-137.924	4.503
	1700.00	90.949	194.597	127.599	-36.728	113.896	-367.543	-253.685	-136.088	4.181
	1800.00	92.150	199.830	131.468	-27.573	123.051	-387.266	-253.988	-129.162	3.748
	1900.00	93.345	204.844	135.199	-18.298	132.326	-407.502	-254.332	-122.218	3.360
	1953.00	93.977	207.421	137.124	-13.334	137.290	-418.427	-254.533	-118.530	3.170
				78.196		152.716				
LIQ	1953.00	119.244	285.616	137.124	139.382	290.006	-418.427	-101.817	-118.530	3.170
	2000.00	119.244	288.452	140.647	144.986	295.610	-431.918	-100.832	-118.944	3.107
	2100.00	119.244	294.270	147.825	156.911	307.535	-461.056	-98.864	-119.899	2.982

References

Phase	H / S	C_p
SOL	Tk1	C1
LIQ	Tk1	C1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	204.436	208.782	208.782	-468.608	0.000	-530.856	-468.608	-470.923	82.504
	300.00	204.895	210.048	208.786	-468.229	0.379	-531.244	-468.571	-470.938	81.998
	400.00	225.178	271.943	217.087	-446.666	21.942	-555.443	-466.206	-472.063	61.645
	500.00	240.948	323.933	233.392	-423.338	45.270	-585.304	-463.022	-473.877	49.506
	600.00	254.943	369.117	252.327	-398.534	70.074	-620.004	-458.959	-476.415	41.476
	700.00	268.099	409.412	271.939	-372.377	96.231	-658.965	-454.026	-479.703	35.796
	800.00	280.808	446.045	291.446	-344.929	123.679	-701.765	-448.272	-483.754	31.586
	900.00	293.257	479.840	310.524	-316.224	152.384	-748.080	-441.772	-488.573	28.356
	1000.00	305.545	511.375	329.050	-286.283	182.325	-797.658	-434.652	-494.149	25.812
	1100.00	317.727	541.069	346.987	-255.118	213.490	-850.294	-426.961	-500.466	23.765
	1200.00	329.838	569.234	364.344	-222.739	245.869	-905.820	-418.735	-507.508	22.091
	1300.00	341.898	596.112	381.146	-189.152	279.456	-964.098	-410.009	-515.256	20.703
	1400.00	353.922	621.889	397.427	-154.361	314.247	-1025.006	-400.819	-523.694	19.539
	1500.00	365.918	646.717	413.224	-118.369	350.239	-1088.444	-391.206	-532.804	18.554
	1600.00	377.893	670.715	428.571	-81.178	387.430	-1154.322	-381.208	-542.568	17.713
	1700.00	389.853	693.983	443.503	-42.791	425.817	-1222.563	-521.398	-551.627	16.949
	1800.00	401.800	716.605	458.050	-3.208	465.400	-1293.097	-510.069	-553.730	16.069

References

Phase	H / S	C _p	Remarks
SOL	C1/Ku1	e	Tk1 MPT= 2398.

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	64.270	64.015	64.015	-93.002	0.000	-112.088	-93.002	-91.128	15.965
	300.00	64.375	64.413	64.016	-92.883	0.119	-112.207	-93.002	-91.117	15.865
	400.00	68.440	83.550	66.598	-86.221	6.781	-119.641	-93.050	-90.483	11.816
	500.00	70.915	99.105	71.593	-79.246	13.756	-128.798	-93.148	-89.831	9.385
	600.00	72.764	112.204	77.298	-72.058	20.944	-139.381	-93.271	-89.156	7.762
	700.00	74.317	123.540	83.112	-64.703	28.299	-151.181	-93.414	-88.459	6.601
	800.00	75.712	133.556	88.804	-57.200	35.802	-164.045	-93.573	-87.741	5.729
	900.00	77.016	142.550	94.284	-49.563	43.439	-177.858	-93.747	-87.001	5.049
	1000.00	78.263	150.729	99.526	-41.799	51.203	-192.528	-93.936	-86.242	4.505
	1100.00	79.473	158.245	104.527	-33.912	59.090	-207.982	-94.138	-85.463	4.058
	1200.00	80.658	165.211	109.297	-25.905	67.097	-224.159	-94.354	-84.665	3.685
	1300.00	81.825	171.714	113.851	-17.781	75.221	-241.008	-94.584	-83.848	3.369
	1400.00	82.978	177.820	118.204	-9.541	83.461	-258.488	-94.827	-83.013	3.097
	1500.00	84.123	183.584	122.373	-1.185	91.817	-276.561	-95.084	-82.161	2.861
	1600.00	85.260	189.049	126.371	7.284	100.286	-295.195	-95.356	-81.290	2.654
	1700.00	86.391	194.252	130.212	15.866	108.868	-314.362	-195.997	-79.509	2.443
	1800.00	87.518	199.222	133.909	24.562	117.564	-334.038	-195.843	-72.661	2.109
	1900.00	88.641	203.984	137.472	33.370	126.372	-354.200	-195.627	-65.823	1.810
	2000.00	89.762	208.559	140.913	42.290	135.292	-374.828	-195.352	-58.998	1.541
	2100.00	90.880	212.966	144.240	51.322	144.324	-395.906	-195.013	-52.188	1.298
	2200.00	91.997	217.219	147.461	60.466	153.468	-417.416	-194.607	-45.396	1.078

References

Phase	H / S	C _p	Remarks
SOL	C1	C1	C1 MPT= 2433.

Si3W5

3-SILICON 5-TUNGSTEN

1003.507

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	181.377	247.274	247.274	-135.202	0.000	-208.927	-135.202	-143.405	25.124
	300.00	181.573	248.397	247.278	-134.866	0.336	-209.385	-135.202	-143.456	24.978
	400.00	189.809	301.849	254.510	-116.266	18.936	-237.006	-135.295	-146.197	19.091
	500.00	195.726	344.864	268.417	-96.979	38.223	-269.411	-135.419	-148.907	15.556
	600.00	200.731	381.001	284.249	-77.151	58.051	-305.751	-135.509	-151.596	13.198
	700.00	205.306	412.291	300.354	-56.846	78.356	-345.450	-135.555	-154.272	11.512
	800.00	209.650	439.991	316.110	-36.097	99.105	-388.090	-135.554	-156.946	10.248
	900.00	213.861	464.929	331.283	-14.921	120.281	-433.356	-135.506	-159.622	9.264
	1000.00	217.990	487.675	345.801	6.672	141.874	-481.003	-135.411	-162.307	8.478
	1100.00	222.064	508.643	359.664	28.675	163.877	-530.832	-135.269	-165.003	7.835
	1200.00	226.101	528.139	372.901	51.084	186.286	-582.683	-135.080	-167.714	7.300
	1300.00	230.112	546.395	385.551	73.895	209.097	-636.419	-134.846	-170.442	6.848
	1400.00	234.105	563.594	397.660	97.106	232.308	-691.926	-134.566	-173.191	6.462
	1500.00	238.083	579.882	409.270	120.715	255.917	-749.107	-134.244	-175.961	6.127
	1600.00	242.051	595.374	420.421	144.722	279.924	-807.876	-133.881	-178.753	5.836
	1700.00	246.010	610.167	431.151	169.125	304.327	-868.159	-284.013	-180.229	5.538
	1800.00	249.963	624.341	441.493	193.924	329.126	-929.889	-282.884	-174.156	5.054
	1900.00	253.912	637.961	451.477	219.118	354.320	-993.009	-281.616	-168.150	4.623
	2000.00	257.856	651.085	461.131	244.706	379.908	-1057.465	-280.215	-162.214	4.237
	2100.00	261.796	663.762	470.480	270.689	405.891	-1123.211	-278.661	-156.351	3.889
	2200.00	265.734	676.031	479.546	297.065	432.267	-1190.204	-276.934	-150.566	3.575

References

Phase	H / S	C _p	Remarks
SOL	C1	C1	C1/Tk1 MPT= 2593. / 2623.

119.310 SILICON ZIRCONIUM SiZr										
Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	44.465	58.158	58.158	-154.808	0.000	-172.148	-154.808	-154.948	27.146
	300.00	44.522	58.433	58.158	-154.726	0.082	-172.256	-154.809	-154.949	26.979
	400.00	46.845	71.589	59.936	-150.147	4.661	-178.783	-154.913	-154.981	20.238
	500.00	48.392	82.217	63.363	-145.381	9.427	-186.490	-155.051	-154.983	16.191
	600.00	49.634	91.152	67.270	-140.478	14.330	-195.170	-155.215	-154.954	13.490
	700.00	50.731	98.887	71.246	-135.459	19.349	-204.680	-155.411	-154.895	11.558
	800.00	51.752	105.729	75.137	-130.335	24.473	-214.918	-155.644	-154.806	10.108
	900.00	52.728	111.881	78.884	-125.110	29.698	-225.803	-155.929	-154.685	8.978
	1000.00	53.677	117.486	82.468	-119.790	35.018	-237.276	-156.274	-154.529	8.072
	1100.00	54.607	122.645	85.889	-114.376	40.432	-249.286	-156.686	-154.335	7.329
	1200.00	55.525	127.436	89.154	-108.869	45.939	-261.792	-160.881	-153.879	6.698
	1300.00	56.434	131.916	92.273	-103.271	51.537	-274.762	-160.893	-153.295	6.159
	1400.00	57.337	136.132	95.256	-97.583	57.225	-288.167	-160.899	-152.710	5.698
	1500.00	58.235	140.118	98.115	-91.804	63.004	-301.981	-160.909	-152.125	5.297

References

Phase	H / S	C _p	Remarks
SOL	Nb1/e	e	Hu1 MPT= 2523.

210.533 SILICON 2-ZIRCONIUM SiZr2										
Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	68.792	100.416	100.416	-208.363	0.000	-238.302	-208.363	-209.513	36.706
	300.00	68.897	100.842	100.417	-208.236	0.127	-238.488	-208.366	-209.521	36.481
	400.00	72.967	121.281	103.176	-201.121	7.242	-249.634	-208.493	-209.885	27.408
	500.00	75.442	137.846	108.506	-193.693	14.670	-262.616	-208.593	-210.221	21.962
	600.00	77.289	151.770	114.587	-186.053	22.310	-277.115	-208.712	-210.536	18.329
	700.00	78.839	163.803	120.778	-178.245	30.118	-292.907	-208.884	-210.827	15.732
	800.00	80.232	174.423	126.832	-170.291	38.072	-309.829	-209.138	-211.089	13.783
	900.00	81.533	183.949	132.658	-162.202	46.161	-327.756	-209.505	-211.312	12.264
	1000.00	82.776	192.604	138.227	-153.986	54.377	-346.590	-210.011	-211.487	11.047
	1100.00	83.983	200.550	143.536	-145.648	62.715	-366.253	-210.671	-211.604	10.048
	1200.00	85.164	207.908	148.598	-137.190	71.173	-386.680	-218.916	-211.210	9.194
	1300.00	86.327	214.771	153.427	-128.616	79.747	-407.818	-218.821	-210.572	8.461
	1400.00	87.477	221.211	158.041	-119.925	88.438	-429.620	-218.736	-209.941	7.833
	1500.00	88.618	227.285	162.457	-111.121	97.242	-452.048	-218.683	-209.315	7.289

References

Phase	H / S	C _p	Remarks
SOL	Hu1/e	e	Hu1 MPT= 2383. (peritec.)

Si2Zr

2-SILICON ZIRCONIUM

147.395

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	64.612	71.546	71.546	-159.410	0.000	-180.742	-159.410	-157.931	27.669
	300.00	64.680	71.946	71.548	-159.290	0.120	-180.874	-159.411	-157.921	27.497
	400.00	67.574	90.978	74.123	-152.668	6.742	-189.059	-159.593	-157.403	20.555
	500.00	69.738	106.297	79.075	-145.799	13.611	-198.947	-159.907	-156.821	16.383
	600.00	71.615	119.180	84.713	-138.730	20.680	-210.238	-160.282	-156.169	13.596
	700.00	73.357	130.352	90.452	-131.480	27.930	-222.727	-160.696	-155.452	11.600
	800.00	75.026	140.257	96.070	-124.061	35.349	-236.266	-161.143	-154.672	10.099
	900.00	76.653	149.188	101.484	-116.477	42.933	-250.746	-161.628	-153.835	8.928
	1000.00	78.254	157.347	106.668	-108.731	50.679	-266.078	-162.158	-152.941	7.989
	1100.00	79.838	164.880	111.622	-100.826	58.584	-282.194	-162.735	-151.992	7.217
	1200.00	81.411	171.894	116.356	-92.764	66.646	-299.037	-167.073	-150.766	6.563
	1300.00	82.975	178.472	120.883	-84.544	74.866	-316.558	-167.206	-149.402	6.003
	1400.00	84.533	184.679	125.221	-76.169	83.241	-334.719	-167.309	-148.028	5.523
	1500.00	86.087	190.564	129.382	-67.638	91.772	-353.484	-167.391	-146.648	5.107

References

Phase	H / S	C _p	Remarks
SOL	Hu1/e	e	Hu1 MPT= 1793. (peritec.)

Si3Zr5

3-SILICON 5-ZIRCONIUM

540.376

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	181.341	263.174	263.174	-575.718	0.000	-654.183	-575.718	-579.406	101.510
	300.00	181.607	264.296	263.177	-575.382	0.336	-654.671	-575.727	-579.429	100.888
	400.00	192.004	318.116	270.445	-556.649	19.069	-683.896	-576.159	-580.597	75.818
	500.00	198.468	361.697	284.475	-537.107	38.611	-717.955	-576.577	-581.658	60.765
	600.00	203.384	398.332	300.478	-517.006	58.712	-756.005	-577.061	-582.631	50.723
	700.00	207.570	430.004	316.770	-496.454	79.264	-797.457	-577.684	-583.512	43.542
	800.00	211.365	457.972	332.706	-475.505	100.213	-841.883	-578.509	-584.291	38.150
	900.00	214.934	483.075	348.043	-454.189	121.529	-888.956	-579.614	-584.951	33.950
	1000.00	218.363	505.899	362.704	-432.523	143.195	-938.422	-581.056	-585.470	30.582
	1100.00	221.700	526.869	376.688	-410.519	165.199	-990.075	-582.875	-585.826	27.819
	1200.00	224.974	546.300	390.022	-388.185	187.533	-1043.745	-603.649	-584.892	25.460
	1300.00	228.204	564.435	402.749	-365.526	210.192	-1099.291	-603.558	-583.332	23.439
	1400.00	231.402	581.464	414.912	-342.545	233.173	-1156.595	-603.483	-581.779	21.706
	1500.00	234.576	597.538	426.556	-319.246	256.472	-1215.552	-603.476	-580.230	20.205

References

Phase	H / S	C _p
SOL	Hu1/e	e

150.360

SAMARIUM

Sm

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [—]
SOL-A	298.15	29.539	69.496	69.496	0.000	0.000	-20.720	0.000	0.000	0.000
	300.00	29.580	69.679	69.497	0.055	0.055	-20.849	0.000	0.000	0.000
	400.00	33.179	78.636	70.694	3.177	3.177	-28.277	0.000	0.000	0.000
	500.00	37.405	86.499	73.082	6.709	6.709	-36.541	0.000	0.000	0.000
	600.00	40.794	93.638	75.922	10.629	10.629	-45.553	0.000	0.000	0.000
	700.00	42.635	100.088	78.922	14.816	14.816	-55.246	0.000	0.000	0.000
	800.00	44.030	105.903	81.938	19.172	19.172	-65.550	0.000	0.000	0.000
	900.00	44.489	111.114	84.895	23.597	23.597	-76.406	0.000	0.000	0.000
	1000.00	45.282	115.839	87.757	28.082	28.082	-87.757	0.000	0.000	0.000
	1100.00	46.536	120.209	90.511	32.668	32.668	-99.562	0.000	0.000	0.000
SOL-B	1190.00	48.376	123.934	92.899	36.932	36.932	-110.549	0.000	0.000	0.000
			2.616		3.113					
	1190.00	46.944	126.550	92.899	40.045	40.045	-110.549	0.000	0.000	0.000
	1200.00	46.944	126.943	93.181	40.515	40.515	-111.817	0.000	0.000	0.000
	1300.00	46.944	130.700	95.924	45.209	45.209	-124.701	0.000	0.000	0.000
LIQ	1345.00	46.944	132.298	97.115	47.322	47.322	-130.619	0.000	0.000	0.000
			6.408		8.619					
	1345.00	50.208	138.706	97.115	55.941	55.941	-130.619	0.000	0.000	0.000
	1400.00	50.208	140.718	98.788	58.702	58.702	-138.304	0.000	0.000	0.000
	1500.00	50.208	144.182	101.700	63.723	63.723	-152.551	0.000	0.000	0.000
	1600.00	50.208	147.423	104.458	68.744	68.744	-167.133	0.000	0.000	0.000
	1700.00	50.208	150.466	107.076	73.764	73.764	-182.029	0.000	0.000	0.000
	1800.00	50.208	153.336	109.567	78.785	78.785	-197.220	0.000	0.000	0.000
	1900.00	50.208	156.051	111.942	83.806	83.806	-212.691	0.000	0.000	0.000
	2000.00	50.208	158.626	114.213	88.827	88.827	-228.426	0.000	0.000	0.000
	2061.00	50.208	160.135	115.550	91.889	91.889	-238.148	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL-A	Hu1	Hu1	
SOL-B	Hu1	Hu1	
LIQ	Hu1	Hu1	Hu1 BPT= 2061., L= 166.41 kJ

Sm[g]

SAMARIUM (GAS)

150.360

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	30.361	208.146	208.146	206.690	0.000	144.631	206.690	165.351	-28.969
	300.00	30.358	208.334	208.147	206.746	0.056	144.246	206.691	165.095	-28.746
	400.00	30.440	217.070	209.337	209.783	3.093	122.955	206.606	151.233	-19.749
	500.00	30.676	223.888	211.590	212.839	6.149	100.895	206.130	137.436	-14.358
	600.00	30.867	229.499	214.121	215.917	9.227	78.217	205.287	123.771	-10.775
	700.00	30.959	234.265	216.667	219.009	12.319	55.023	204.193	110.269	-8.228
	800.00	30.939	238.399	219.131	222.105	15.415	31.385	202.932	96.935	-6.329
	900.00	30.810	242.037	221.478	225.193	18.503	7.360	201.596	83.766	-4.862
	1000.00	30.583	245.272	223.699	228.263	21.573	-17.009	200.181	70.748	-3.696
	1100.00	30.272	248.173	225.794	231.307	24.617	-41.684	198.639	57.878	-2.748
	1200.00	29.892	250.791	227.770	234.316	27.626	-66.634	193.801	45.183	-1.967
	1300.00	29.460	253.167	229.634	237.283	30.593	-91.834	192.074	32.868	-1.321
	1400.00	28.993	255.333	231.393	240.206	33.516	-117.260	181.504	21.043	-0.785
	1500.00	28.508	257.317	233.056	243.081	36.391	-142.894	179.359	9.656	-0.336
	1600.00	28.022	259.141	234.630	245.908	39.218	-168.718	177.164	-1.586	0.052
	1700.00	27.555	260.826	236.122	248.686	41.996	-194.718	174.922	-12.689	0.390
	1800.00	27.123	262.389	237.539	251.420	44.730	-220.880	172.635	-23.659	0.687
	1900.00	26.744	263.845	238.885	254.113	47.423	-247.192	170.307	-34.501	0.949
	2000.00	26.436	265.208	240.168	256.771	50.081	-273.645	167.944	-45.220	1.181
	2100.00	26.218	266.492	241.391	259.403	52.713	-300.231	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

174.382

SAMARIUM DICARBIDE

SmC2

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
SOL-A	298.15	69.789	87.906	87.906	-96.232	0.000	-122.441	-96.232	-98.298	17.221
	300.00	69.931	88.338	87.907	-96.103	0.129	-122.604	-96.189	-98.311	17.117
	400.00	75.270	109.277	90.726	-88.811	7.421	-132.522	-94.094	-99.347	12.973
	500.00	78.260	126.419	96.203	-81.124	15.108	-144.333	-92.600	-100.847	10.535
	600.00	80.328	140.880	102.475	-73.189	23.043	-157.717	-91.747	-102.587	8.931
	700.00	81.960	153.389	108.875	-65.072	31.160	-172.445	-91.373	-104.428	7.793
	800.00	83.360	164.426	115.143	-56.805	39.427	-188.346	-91.310	-106.300	6.941
	900.00	84.624	174.319	121.178	-48.405	47.827	-205.292	-91.400	-108.170	6.278
	1000.00	85.806	183.297	126.948	-39.883	56.349	-223.180	-91.602	-110.023	5.747
	1100.00	86.932	191.528	132.449	-31.246	64.986	-241.926	-91.929	-111.851	5.311
	1200.00	88.022	199.139	137.694	-22.498	73.734	-261.464	-95.518	-113.615	4.946
	1300.00	89.085	206.227	142.696	-13.642	82.590	-281.737	-95.940	-115.106	4.625
	1400.00	90.129	212.867	147.473	-4.681	91.551	-302.695	-105.131	-116.210	4.336
	1440.00	90.542	215.412	149.325	-1.068	95.164	-311.261	-105.406	-116.522	4.227
			3.865			5.565				
SOL-B	1440.00	90.550	219.276	149.325	4.497	100.729	-311.261	-99.841	-116.522	4.227
	1500.00	91.155	222.985	152.198	9.948	106.180	-324.529	-100.241	-117.209	4.082
	1600.00	92.163	228.900	156.809	19.114	115.346	-347.126	-100.864	-118.320	3.863
	1700.00	93.171	234.518	161.216	28.381	124.613	-370.299	-101.426	-119.393	3.668
	1800.00	94.178	239.872	165.438	37.748	133.980	-394.021	-101.920	-120.435	3.495
	1900.00	95.186	244.991	169.491	47.216	143.448	-418.266	-102.342	-121.452	3.339
	2000.00	96.194	249.899	173.390	56.786	153.018	-443.012	-102.688	-122.449	3.198

References

Phase	H / S	C _p
SOL-A	Pa3	Pa3
SOL-B	Pa3	Pa3

221.265

SAMARIUM DICHLORIDE

SmCl2

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
SOL	298.15	82.394	127.612	127.612	-815.499	0.000	-853.547	-815.499	-766.304	134.253
	300.00	82.425	128.122	127.614	-815.347	0.152	-853.783	-815.464	-765.999	133.372
	400.00	84.098	152.063	130.867	-807.020	8.479	-867.846	-813.727	-749.781	97.911
	500.00	85.772	171.009	137.065	-798.527	16.972	-884.031	-812.336	-733.963	76.677
	600.00	87.446	186.795	144.073	-789.866	25.633	-901.943	-811.231	-718.396	62.542
	700.00	89.119	200.400	151.170	-781.038	34.461	-921.318	-810.266	-703.000	52.459
	800.00	90.793	212.410	158.089	-772.042	43.457	-941.970	-809.333	-687.740	44.905
	900.00	92.466	223.200	164.734	-762.879	52.620	-963.759	-808.320	-672.600	39.037
	1000.00	94.140	233.029	171.079	-753.549	61.950	-986.578	-807.216	-657.579	34.348

References

Phase	H / S	C _p
SOL	Nb1/e	e

SmCl3

SAMARIUM TRICHLORIDE

256.718

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	99.528	150.122	150.122	-1025.900	0.000	-1070.659	-1025.900	-950.155	166.463
	300.00	99.648	150.738	150.124	-1025.716	0.184	-1070.937	-1025.865	-949.685	165.355
	400.00	104.743	180.157	154.100	-1015.477	10.423	-1087.540	-1023.949	-924.582	120.738
	500.00	108.428	203.940	161.765	-1004.812	21.088	-1106.782	-1022.172	-899.950	94.017
	600.00	111.559	223.991	170.508	-993.810	32.090	-1128.205	-1020.543	-875.660	76.233
	700.00	114.428	241.406	179.419	-982.509	43.391	-1151.493	-1018.944	-851.639	63.550
	800.00	117.157	256.865	188.151	-970.929	54.971	-1176.421	-1017.278	-827.851	54.053
	900.00	119.805	270.818	196.574	-959.080	66.820	-1202.816	-1015.443	-804.280	46.679
	950.00	121.109	277.330	200.654	-953.057	72.843	-1216.521	-1014.456	-792.576	43.579
LIQ			48.446		46.024					
	950.00	142.256	325.777	200.654	-907.033	118.867	-1216.521	-968.432	-792.576	43.579
	1000.00	142.256	333.073	207.094	-899.920	125.980	-1232.994	-966.380	-783.373	40.919
	1100.00	142.256	346.632	219.173	-885.695	140.205	-1266.990	-962.371	-765.268	36.340
	1200.00	142.256	359.010	230.317	-871.469	154.431	-1302.281	-961.638	-747.494	32.538
	1300.00	142.256	370.396	240.661	-857.244	168.656	-1338.759	-957.766	-729.806	29.324

References

Phase	H / S	C _p
SOL	Pa2	Pa2
LIQ	Pa2	Pa2

Sm2O3

DISAMARIUM TRIOXIDE (CUBIC)

348.718

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-C	298.15	115.837	144.766	144.766	-1827.404	0.000	-1870.566	-1827.404	-1737.379	304.382
	300.00	116.074	145.484	144.769	-1827.189	0.215	-1870.835	-1827.380	-1736.820	302.407
	400.00	125.792	180.326	149.453	-1815.055	12.349	-1887.185	-1825.946	-1706.846	222.891
	500.00	132.176	209.122	158.591	-1802.138	25.266	-1906.699	-1824.682	-1677.225	175.218
	600.00	136.902	233.658	169.107	-1788.674	38.730	-1928.868	-1823.798	-1647.822	143.456
	700.00	140.547	255.047	179.889	-1774.794	52.610	-1953.327	-1823.173	-1618.544	120.777
	800.00	143.352	274.006	190.491	-1760.592	66.812	-1979.797	-1822.690	-1589.345	103.774
	900.00	145.432	291.017	200.732	-1746.147	81.257	-2008.063	-1822.202	-1560.206	90.552
	1000.00	146.846	306.419	210.543	-1731.528	95.876	-2037.947	-1821.746	-1531.121	79.978
	1100.00	147.628	320.457	219.907	-1716.799	110.605	-2069.301	-1821.454	-1502.074	71.328
	1200.00	147.796	333.314	228.829	-1702.023	125.381	-2101.999	-1827.694	-1472.989	64.118
	1250.00	147.654	339.344	233.130	-1694.636	132.768	-2118.817	-1827.682	-1458.210	60.935

References

Phase	H / S	C _p	Remarks
SOL-C	Pa1	Pa1	TPT (cubic - monoclinic): uncertain

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
SOL-M1	298.15	114.533	151.042	151.042	–1823.638	0.000	–1868.671	–1823.638	–1735.484	304.050
	300.00	114.806	151.752	151.045	–1823.426	0.212	–1868.951	–1823.617	–1734.937	302.079
	400.00	125.109	186.360	155.693	–1811.371	12.267	–1885.915	–1822.263	–1705.576	222.725
	500.00	130.976	214.955	164.771	–1798.546	25.092	–1906.023	–1821.090	–1676.548	175.148
	600.00	135.097	239.217	175.208	–1785.233	38.405	–1928.763	–1820.357	–1647.716	143.446
	700.00	138.394	260.297	185.890	–1771.553	52.085	–1953.761	–1819.932	–1618.979	120.810
	800.00	141.252	278.967	196.380	–1757.568	66.070	–1980.742	–1819.666	–1590.290	103.835
	900.00	143.854	295.756	206.504	–1743.311	80.327	–2009.492	–1819.366	–1561.635	90.635
	1000.00	146.298	311.041	216.205	–1728.803	94.835	–2039.843	–1819.021	–1533.017	80.077
	1100.00	148.638	325.095	225.474	–1714.055	109.583	–2071.659	–1818.710	–1504.432	71.440
	1195.00	150.795	337.496	233.892	–1699.832	123.806	–2103.139	–1824.765	–1477.272	64.573
SOL-M2			0.875		1.046					
	1195.00	154.390	338.371	233.892	–1698.786	124.852	–2103.139	–1823.719	–1477.272	64.573
	1200.00	154.390	339.016	234.329	–1698.014	125.624	–2104.832	–1823.684	–1475.823	64.241
	1300.00	154.390	351.373	242.863	–1682.575	141.063	–2139.360	–1823.009	–1446.862	58.136
	1400.00	154.390	362.815	251.028	–1667.136	156.502	–2175.077	–1839.976	–1417.239	52.878
	1500.00	154.390	373.467	258.839	–1651.697	171.941	–2211.897	–1840.040	–1387.042	48.301
	1600.00	154.390	383.431	266.318	–1636.258	187.380	–2249.747	–1840.143	–1356.839	44.296
	1700.00	154.390	392.791	273.485	–1620.819	202.819	–2288.563	–1840.284	–1326.628	40.762
	1800.00	154.390	401.615	280.361	–1605.380	218.258	–2328.287	–1840.460	–1296.408	37.621
	1900.00	154.390	409.963	286.964	–1589.941	233.697	–2368.870	–1840.672	–1266.177	34.810
	2000.00	154.390	417.882	293.314	–1574.502	249.136	–2410.266	–1840.919	–1235.934	32.279

References

Phase	H / S	C _p
SOL–M1	Pa1	Pa1
SOL–M2	Pa1	Pa1

SmOF

SAMARIUM FLUORIDE OXIDE

185.358

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL-A	298.15	69.572	94.140	94.140	-1148.926	0.000	-1176.994	-1148.926	-1095.460	191.920
	300.00	69.714	94.571	94.141	-1148.797	0.129	-1177.168	-1148.908	-1095.128	190.679
	400.00	75.058	115.448	96.952	-1141.527	7.399	-1187.707	-1147.853	-1077.359	140.689
	500.00	78.053	132.544	102.413	-1133.861	15.065	-1200.132	-1146.929	-1059.847	110.722
	600.00	80.123	146.967	108.668	-1125.947	22.979	-1214.127	-1146.252	-1042.499	90.758
	700.00	81.756	159.444	115.050	-1117.850	31.076	-1229.461	-1145.744	-1025.248	76.505
	797.00	83.118	170.142	121.117	-1109.853	39.073	-1245.456	-1145.338	-1008.578	66.101
			6.562		5.230					
SOL-B	797.00	83.118	176.704	121.117	-1104.623	44.303	-1245.456	-1140.108	-1008.578	66.101
	800.00	83.157	177.017	121.326	-1104.373	44.553	-1245.986	-1140.095	-1008.083	65.821
	900.00	84.423	186.885	128.071	-1095.993	52.933	-1264.190	-1139.667	-991.607	57.551
	1000.00	85.605	195.842	134.407	-1087.491	61.435	-1283.333	-1139.221	-975.180	50.938
	1100.00	86.731	204.054	140.371	-1078.874	70.052	-1303.334	-1138.798	-958.796	45.529
	1200.00	89.663	211.655	145.998	-1070.137	78.789	-1324.123	-1141.545	-942.423	41.023
	1300.00	89.663	218.832	151.328	-1061.171	87.755	-1345.653	-1140.938	-925.854	37.201
	1400.00	89.663	225.477	156.390	-1052.204	96.722	-1367.872	-1149.153	-908.975	33.914
	1500.00	89.663	231.663	161.204	-1043.238	105.688	-1390.733	-1148.917	-891.828	31.056
	1600.00	89.663	237.450	165.791	-1034.272	114.654	-1414.192	-1148.699	-874.696	28.556
	1700.00	89.663	242.886	170.168	-1025.305	123.621	-1438.211	-1148.501	-857.576	26.350
	1800.00	89.663	248.011	174.351	-1016.339	132.587	-1462.758	-1148.320	-840.469	24.390
	1900.00	89.663	252.858	178.357	-1007.373	141.553	-1487.804	-1148.155	-823.370	22.636
	2000.00	89.663	257.458	182.198	-998.406	150.520	-1513.322	-1148.007	-806.280	21.058

References

Phase	H / S	C _p
SOL-A	W2	W2
SOL-B	W2,S1	W2

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
SOL	298.15	226.231	251.877	251.877	-4071.032	0.000	-4146.129	-4071.032	-3867.435	677.559
	300.00	226.931	253.278	251.881	-4070.613	0.419	-4146.596	-4071.006	-3866.172	673.160
	400.00	252.735	322.557	261.152	-4046.470	24.562	-4175.493	-4068.625	-3798.213	495.996
	500.00	266.521	380.563	279.398	-4020.449	50.583	-4210.731	-4065.624	-3730.956	389.770
	600.00	275.577	430.003	300.481	-3993.319	77.713	-4251.321	-4062.775	-3664.295	319.005
	700.00	282.400	473.015	322.123	-3965.407	105.625	-4296.518	-4060.159	-3598.090	268.493
	800.00	288.032	511.102	343.410	-3936.878	134.154	-4345.760	-4057.722	-3532.248	230.632
	900.00	292.972	545.318	363.975	-3907.824	163.208	-4398.610	-4055.331	-3466.708	201.202
	1000.00	297.482	576.422	383.688	-3878.298	192.734	-4454.720	-4053.004	-3401.431	177.673
	1100.00	301.712	604.975	402.525	-3848.336	222.696	-4513.809	-4050.840	-3336.380	158.431
	1200.00	305.750	631.402	420.510	-3817.962	253.070	-4575.644	-4062.583	-3271.020	142.384

References

Phase	H / S	C _p
SOL	K5/e	e

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-B	298.15	26.989	51.195	51.195	0.000	0.000	-15.264	0.000	0.000	0.000
	300.00	27.022	51.362	51.196	0.050	0.050	-15.359	0.000	0.000	0.000
	400.00	28.832	59.384	52.277	2.843	2.843	-20.911	0.000	0.000	0.000
	500.00	30.642	66.012	54.379	5.816	5.816	-27.190	0.000	0.000	0.000
	505.06	30.733	66.321	54.498	5.972	5.972	-27.525	0.000	0.000	0.000
LIQ			13.917		7.029					
	505.06	29.694	80.238	54.498	13.001	13.001	-27.525	0.000	0.000	0.000
	600.00	28.805	85.268	58.982	15.772	15.772	-35.389	0.000	0.000	0.000
	700.00	28.471	89.678	63.061	18.632	18.632	-44.143	0.000	0.000	0.000
	800.00	28.469	93.476	66.631	21.477	21.477	-53.304	0.000	0.000	0.000
	900.00	28.451	96.828	69.803	24.322	24.322	-62.823	0.000	0.000	0.000
	1000.00	28.451	99.825	72.658	27.167	27.167	-72.658	0.000	0.000	0.000
	1100.00	28.451	102.537	75.253	30.012	30.012	-82.778	0.000	0.000	0.000
	1200.00	28.451	105.012	77.631	32.857	32.857	-93.158	0.000	0.000	0.000
	1300.00	28.451	107.290	79.826	35.702	35.702	-103.774	0.000	0.000	0.000
	1400.00	28.451	109.398	81.864	38.547	38.547	-114.610	0.000	0.000	0.000
	1500.00	28.451	111.361	83.766	41.393	41.393	-125.649	0.000	0.000	0.000
	1600.00	28.451	113.197	85.549	44.238	44.238	-136.878	0.000	0.000	0.000
	1700.00	28.451	114.922	87.226	47.083	47.083	-148.285	0.000	0.000	0.000
	1800.00	28.451	116.548	88.811	49.928	49.928	-159.859	0.000	0.000	0.000
	1900.00	28.451	118.087	90.311	52.773	52.773	-171.592	0.000	0.000	0.000
	2000.00	28.451	119.546	91.737	55.618	55.618	-183.474	0.000	0.000	0.000
	2100.00	28.451	120.934	93.095	58.463	58.463	-195.499	0.000	0.000	0.000
	2200.00	28.451	122.258	94.390	61.308	61.308	-207.659	0.000	0.000	0.000
	2300.00	28.451	123.522	95.630	64.153	64.153	-219.948	0.000	0.000	0.000
	2400.00	28.451	124.733	96.817	66.999	66.999	-232.361	0.000	0.000	0.000
	2500.00	28.451	125.895	97.957	69.844	69.844	-244.893	0.000	0.000	0.000
	2600.00	28.451	127.011	99.053	72.689	72.689	-257.539	0.000	0.000	0.000
	2700.00	28.451	128.084	100.109	75.534	75.534	-270.294	0.000	0.000	0.000
	2800.00	28.451	129.119	101.127	78.379	78.379	-283.154	0.000	0.000	0.000
	2873.00	28.451	129.851	101.847	80.456	80.456	-292.607	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL-B	Hu1	Hu1	Hu1 TPT(grey - white)= 286.2, L= 1.97 kJ
LIQ	Hu1	Hu1	BPT= 2873., L= 295.76 kJ

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		
GAS	298.15	21.259	168.486	168.486	301.248	0.000	251.014	301.248	266.278	-46.651
	300.00	21.283	168.618	168.487	301.287	0.039	250.702	301.237	266.061	-46.325
	400.00	22.887	174.938	169.338	303.488	2.240	233.513	300.645	254.424	-33.224
	500.00	25.324	180.297	171.005	305.894	4.646	215.746	300.078	242.935	-25.379
	600.00	27.881	185.143	172.963	308.556	7.308	197.470	292.785	232.859	-20.272
	700.00	30.057	189.611	175.026	311.458	10.210	178.730	292.826	222.872	-16.631
	800.00	31.651	193.736	177.111	314.548	13.300	159.559	293.071	212.864	-13.899
	900.00	32.641	197.527	179.172	317.768	16.520	139.994	293.446	202.817	-11.771
	1000.00	33.095	200.993	181.183	321.058	19.810	120.065	293.891	192.723	-10.067
	1100.00	33.163	204.155	183.130	324.375	23.127	99.805	294.363	182.584	-8.670
	1200.00	32.886	207.030	185.004	327.680	26.432	79.244	294.822	172.401	-7.504
	1300.00	32.427	209.645	186.800	330.946	29.698	58.408	295.244	162.182	-6.517
	1400.00	31.881	212.028	188.518	334.162	32.914	37.322	295.615	151.932	-5.669
	1500.00	31.303	214.208	190.159	337.321	36.073	16.009	295.929	141.658	-4.933
	1600.00	30.728	216.210	191.726	340.423	39.175	-5.514	296.185	131.365	-4.289
	1700.00	30.176	218.056	193.221	343.468	42.220	-27.228	296.385	121.057	-3.720
	1800.00	29.658	219.766	194.649	346.459	45.211	-49.120	296.531	110.739	-3.214
	1900.00	29.180	221.357	196.013	349.401	48.153	-71.177	296.628	100.414	-2.761
	2000.00	28.745	222.842	197.318	352.297	51.049	-93.388	296.679	90.086	-2.353
	2100.00	28.353	224.235	198.567	355.151	53.903	-115.743	296.688	79.756	-1.984
	2200.00	28.002	225.546	199.764	357.969	56.721	-138.232	296.660	69.426	-1.648
	2300.00	27.689	226.784	200.912	360.753	59.505	-160.850	296.599	59.099	-1.342
	2400.00	27.411	227.956	202.015	363.508	62.260	-183.587	296.509	48.774	-1.062
	2500.00	27.163	229.070	203.075	366.236	64.988	-206.439	296.392	38.454	-0.803
	2600.00	26.941	230.131	204.095	368.941	67.693	-229.399	296.252	28.139	-0.565
	2700.00	26.740	231.144	205.078	371.625	70.377	-252.463	296.091	17.830	-0.345
	2800.00	26.555	232.113	206.027	374.289	73.041	-275.627	295.910	7.528	-0.140
	2900.00	26.380	233.042	206.942	376.936	75.688	-298.885	0.000	0.000	0.000
	3000.00	26.209	233.933	207.827	379.566	78.318	-322.234	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

Sn3(AsO4)2

TRITIN ARSENATE

633.968

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	259.131	303.926	303.926	-1785.773	0.000	-1876.388	-1785.773	-1564.647	274.120
	300.00	259.760	305.531	303.931	-1785.293	0.480	-1876.952	-1785.752	-1563.275	272.190
	400.00	284.414	383.993	314.461	-1757.960	27.813	-1911.558	-1783.694	-1489.385	194.494
	500.00	299.738	449.204	335.074	-1728.708	57.065	-1953.310	-1780.732	-1416.141	147.943
	600.00	311.389	504.919	358.851	-1698.132	87.641	-2001.083	-1797.905	-1339.609	116.623
	700.00	321.307	553.680	383.272	-1666.487	119.286	-2054.063	-1793.215	-1263.589	94.290
	800.00	330.300	597.180	407.339	-1633.901	151.872	-2111.645	-1787.975	-1188.280	77.587
	900.00	338.756	636.576	430.655	-1600.445	185.328	-2173.363	-1782.241	-1113.657	64.635
	907.00	339.334	639.202	432.255	-1598.071	187.702	-2177.828	-1781.820	-1108.458	63.837

References

Phase	H / S	C _p
SOL	G1	G1

SnBr2

TIN DIBROMIDE

278.518

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	78.965	153.001	153.001	-243.509	0.000	-289.126	-243.509	-228.481	40.029
	300.00	79.036	153.489	153.002	-243.363	0.146	-289.410	-243.553	-228.387	39.766
	400.00	83.136	176.764	156.148	-235.263	8.246	-305.968	-272.728	-217.241	28.369
	500.00	88.701	195.885	162.234	-226.684	16.825	-324.626	-270.814	-203.583	21.268
	504.00	88.952	196.592	162.504	-226.328	17.181	-325.411	-270.730	-203.046	21.044
LIQ			34.036		17.154					
	504.00	103.763	230.628	162.504	-209.174	34.335	-325.411	-253.576	-203.046	21.044
	600.00	103.763	248.720	174.893	-199.213	44.296	-348.445	-257.017	-192.420	16.752
	700.00	103.763	264.715	186.611	-188.837	54.672	-374.137	-253.236	-181.953	13.577
	800.00	103.763	278.570	197.260	-178.460	65.049	-401.317	-249.453	-172.028	11.232
	900.00	103.763	290.792	206.986	-168.084	75.425	-429.797	-245.679	-162.577	9.436
	1000.00	103.763	301.724	215.923	-157.708	85.801	-459.432	-241.913	-153.545	8.020

References

Phase	H / S	C _p
SOL	Pa2	Pa2
LIQ	Pa2	Pa2

438.326

TIN TETRABROMIDE

SnBr₄

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	136.451	264.429	264.429	-405.848	0.000	-484.687	-405.848	-378.661	66.340
	300.00	142.256	265.291	264.431	-405.590	0.258	-485.177	-405.920	-378.492	65.901
	303.00	151.670	266.753	264.447	-405.149	0.699	-485.975	-406.014	-378.217	65.201
			37.284		11.297					
LIQ	303.00	157.946	304.037	264.447	-393.852	11.996	-485.975	-394.717	-378.217	65.201
	400.00	157.946	347.903	279.612	-378.532	27.316	-517.693	-450.618	-361.149	47.161
	480.00	157.946	376.700	293.467	-365.896	39.952	-546.712	-446.250	-343.668	37.399

References

Phase	H / S	C _p	Remarks
SOL	Tk1/e	e	
LIQ	Tk1	e	Tk1 BPT= 480., L= 36.8 kJ

438.326

TIN TETRABROMIDE (GAS)

SnBr₄[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	103.422	412.652	412.652	-348.109	0.000	-471.141	-348.109	-365.115	63.967
	300.00	103.463	413.292	412.654	-347.918	0.191	-471.905	-348.248	-365.220	63.590
	400.00	104.913	443.283	416.733	-337.489	10.620	-514.802	-409.576	-358.258	46.784
	500.00	105.605	466.776	424.477	-326.959	21.150	-560.348	-409.404	-345.452	36.089
	600.00	105.987	486.067	433.182	-316.378	31.731	-608.018	-416.215	-331.359	28.847
	700.00	106.221	502.424	441.935	-305.767	42.342	-657.464	-415.934	-317.238	23.673
	800.00	106.374	516.619	450.403	-295.137	52.972	-708.432	-415.644	-303.159	19.794
	900.00	106.479	529.154	458.470	-284.494	63.615	-760.732	-415.361	-289.115	16.780
	1000.00	106.555	540.377	466.110	-273.842	74.267	-814.219	-415.086	-275.102	14.370

References

Phase	H / S	C _p
GAS	Tk1	e

SnCl[g]

TIN MONOCHLORIDE (GAS)

154.163

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	35.834	253.409	253.409	34.660	0.000	-40.894	34.660	7.631	-1.337
	300.00	35.860	253.631	253.409	34.726	0.066	-41.363	34.645	7.464	-1.300
	400.00	36.696	264.076	254.828	38.359	3.699	-67.271	33.752	-1.467	0.192
	500.00	37.388	272.337	257.532	42.063	7.403	-94.106	32.696	-10.152	1.061
	600.00	38.146	279.220	260.589	45.839	11.179	-121.693	24.699	-17.307	1.507
	700.00	38.902	285.158	263.684	49.692	15.032	-149.919	23.854	-24.240	1.809
	800.00	39.597	290.399	266.702	53.617	18.957	-178.702	23.082	-31.057	2.028
	900.00	40.198	295.098	269.600	57.608	22.948	-207.980	22.364	-37.781	2.193
	1000.00	40.693	299.360	272.367	61.653	26.993	-237.707	21.694	-44.427	2.321
	1100.00	41.079	303.257	275.000	65.743	31.083	-267.840	21.061	-51.008	2.422
	1200.00	41.363	306.845	277.507	69.866	35.206	-298.348	20.457	-57.533	2.504
	1300.00	41.554	310.163	279.893	74.012	39.352	-329.200	19.872	-64.009	2.572
	1400.00	41.665	313.247	282.166	78.174	43.514	-360.373	19.298	-70.440	2.628
	1500.00	41.711	316.124	284.335	82.343	47.683	-391.843	18.728	-76.830	2.675
	1600.00	41.708	318.816	286.407	86.514	51.854	-423.591	18.156	-83.181	2.716
	1700.00	41.674	321.344	288.389	90.684	56.024	-455.601	17.579	-89.497	2.750
	1800.00	41.624	323.724	290.286	94.849	60.189	-487.855	16.993	-95.779	2.779
	1900.00	41.579	325.974	292.106	99.009	64.349	-520.341	16.399	-102.028	2.805
	2000.00	41.555	328.106	293.853	103.165	68.505	-553.046	15.798	-108.246	2.827

References

Phase	H / S	C _p
GAS	Pa2	Pa2

SnCl2

TIN DICHLORIDE

189.615

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	78.047	134.101	134.101	-328.026	0.000	-368.008	-328.026	-286.222	50.145
	300.00	78.129	134.584	134.103	-327.882	0.144	-368.257	-327.994	-285.963	49.791
	400.00	82.576	157.670	137.220	-319.846	8.180	-382.914	-326.219	-272.216	35.548
	500.00	87.031	176.574	143.254	-311.366	16.660	-399.653	-324.283	-258.936	27.051
	520.00	87.922	180.005	144.602	-309.617	18.409	-403.219	-330.883	-256.122	25.728
			28.162		14.644					
LIQ	520.00	100.416	208.167	144.602	-294.973	33.053	-403.219	-316.239	-256.122	25.728
	600.00	100.416	222.536	154.058	-286.939	41.087	-420.461	-313.447	-247.078	21.510
	700.00	100.416	238.015	164.975	-276.898	51.128	-443.508	-309.942	-236.294	17.632
	800.00	100.416	251.424	174.962	-266.856	61.170	-467.995	-306.451	-226.011	14.757
	885.00	100.416	261.564	182.801	-258.321	69.705	-489.805	-303.500	-217.616	12.844

References

Phase	H / S	C _p	Remarks
SOL	Pa2	Pa2	
LIQ	Pa2	Pa2	Pa2 BPT= 885., L= 93.7 kJ

189.615

TIN DICHLORIDE (GAS)

SnCl2[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	54.632	305.855	305.855	-197.945	0.000	-289.136	-197.945	-207.350	36.327
	300.00	54.674	306.193	305.856	-197.844	0.101	-289.702	-197.957	-207.408	36.113
	400.00	56.154	322.155	308.022	-192.292	5.653	-321.154	-198.665	-210.456	27.483
	500.00	56.846	334.768	312.155	-186.638	11.307	-354.022	-199.555	-213.305	22.284
	600.00	57.228	345.169	316.816	-180.933	17.012	-388.034	-207.440	-214.651	18.687
	700.00	57.464	354.010	321.513	-175.197	22.748	-423.004	-208.242	-215.789	16.102
	800.00	57.622	361.694	326.066	-169.443	28.502	-458.798	-209.037	-216.813	14.156
	900.00	57.734	368.488	330.410	-163.674	34.271	-495.314	-209.840	-217.737	12.637
	1000.00	57.818	374.576	334.527	-157.897	40.048	-532.472	-210.649	-218.572	11.417
	1100.00	57.884	380.089	338.422	-152.111	45.834	-570.210	-211.462	-219.325	10.415
	1200.00	57.937	385.128	342.108	-146.320	51.625	-608.474	-212.280	-220.003	9.576
	1300.00	57.982	389.768	345.598	-140.524	57.421	-647.222	-213.102	-220.613	8.864
	1400.00	58.020	394.066	348.908	-134.724	63.221	-686.416	-213.928	-221.160	8.252
	1500.00	58.053	398.070	352.054	-128.920	69.025	-726.025	-214.758	-221.648	7.718
	1600.00	58.082	401.818	355.048	-123.114	74.831	-766.022	-215.593	-222.080	7.250
	1700.00	58.109	405.340	357.904	-117.304	80.641	-806.381	-216.431	-222.460	6.835
	1800.00	58.134	408.662	360.632	-111.492	86.453	-847.083	-217.275	-222.790	6.465
	1900.00	58.157	411.806	363.244	-105.677	92.268	-888.108	-218.123	-223.073	6.133
	2000.00	58.178	414.789	365.747	-99.861	98.084	-929.439	-218.976	-223.312	5.832

References

Phase	H / S	C _p
GAS	Pa2	Pa2

260.521

TIN TETRACHLORIDE

SnCl4

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
LIQ	298.15	165.270	258.739	258.739	-511.285	0.000	-588.428	-511.285	-440.120	77.107
	300.00	165.727	259.762	258.742	-510.979	0.306	-588.908	-511.154	-439.678	76.555
	381.50	185.896	301.918	263.557	-496.650	14.635	-611.832	-504.721	-421.035	57.648

References

Phase	H / S	C _p	Remarks
LIQ	Pa2	Pa2	Pa2 BPT= 381.5, L= 33.43 kJ

SnCl4[g]

TIN TETRACHLORIDE (GAS)

260.521

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	98.452	364.954	364.954	-471.537	0.000	-580.348	-471.537	-432.040	75.692
	300.00	98.560	365.564	364.956	-471.355	0.182	-581.024	-471.530	-431.795	75.182
	400.00	102.417	394.522	368.878	-461.279	10.258	-619.088	-471.182	-418.604	54.664
	500.00	104.279	417.597	376.393	-450.935	20.602	-659.734	-470.953	-405.489	42.361
	600.00	105.354	436.712	384.899	-440.449	31.088	-702.477	-477.693	-391.100	34.048
	700.00	106.059	453.009	393.494	-429.876	41.661	-746.983	-477.334	-376.695	28.109
	800.00	106.566	467.206	401.840	-419.244	52.293	-793.009	-476.957	-362.344	23.659
	900.00	106.958	479.781	409.814	-408.567	62.970	-840.370	-476.576	-348.040	20.200
	1000.00	107.279	491.068	417.385	-397.854	73.683	-888.922	-476.192	-333.779	17.435

References

Phase	H / S	C _p
GAS	Pa2	Pa2

SnF[g]

TIN MONOFLUORIDE (GAS)

137.708

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	33.703	241.614	241.614	-95.019	0.000	-167.056	-95.019	-121.561	21.297
	300.00	33.741	241.823	241.615	-94.957	0.062	-167.503	-95.036	-121.725	21.194
	400.00	35.228	251.751	242.958	-91.502	3.517	-192.202	-95.980	-130.483	17.039
	500.00	36.371	259.737	245.541	-87.921	7.098	-217.790	-97.055	-138.987	14.520
	600.00	37.418	266.462	248.482	-84.231	10.788	-244.108	-105.056	-145.957	12.707
	700.00	38.359	272.303	251.477	-80.441	14.578	-271.053	-105.902	-152.706	11.395
	800.00	39.174	277.479	254.409	-76.563	18.456	-298.547	-106.672	-159.339	10.404
	900.00	39.853	282.134	257.236	-72.611	22.408	-326.531	-107.388	-165.879	9.627
	1000.00	40.397	286.362	259.940	-68.597	26.422	-354.959	-108.060	-172.342	9.002
	1100.00	40.814	290.233	262.521	-64.535	30.484	-383.792	-108.697	-178.739	8.488
	1200.00	41.114	293.798	264.981	-60.438	34.581	-412.996	-109.309	-185.079	8.056
	1300.00	41.312	297.097	267.326	-56.316	38.703	-442.542	-109.905	-191.369	7.689
	1400.00	41.423	300.163	269.563	-52.179	42.840	-472.407	-110.494	-197.614	7.373
	1500.00	41.466	303.023	271.699	-48.034	46.985	-502.568	-111.083	-203.816	7.097
	1600.00	41.457	305.699	273.742	-43.887	51.132	-533.006	-111.676	-209.979	6.855
	1700.00	41.416	308.211	275.696	-39.743	55.276	-563.703	-112.278	-216.104	6.640
	1800.00	41.361	310.577	277.569	-35.604	59.415	-594.643	-112.891	-222.194	6.448
	1900.00	41.311	312.812	279.366	-31.471	63.548	-625.814	-113.514	-228.249	6.275
	2000.00	41.285	314.930	281.091	-27.341	67.678	-657.202	-114.146	-234.272	6.119

References

Phase	H / S	C _p
GAS	Pa2	Pa2

156.707

TIN DIFLUORIDE

SnF2

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	72.395	96.199	96.199	-648.520	0.000	-677.202	-648.520	-601.474	105.376
	300.00	72.505	96.647	96.200	-648.386	0.134	-677.380	-648.494	-601.183	104.675
	400.00	78.450	118.319	99.115	-640.838	7.682	-688.166	-646.952	-585.638	76.476
	488.20	83.692	134.456	104.075	-633.688	14.832	-699.329	-645.375	-572.276	61.230
LIQ			21.512		10.502					
	488.20	99.998	155.968	104.075	-623.186	25.334	-699.329	-634.873	-572.276	61.230
	500.00	99.998	158.356	105.328	-622.006	26.514	-701.184	-634.457	-570.768	59.628
	600.00	99.998	176.588	115.731	-612.006	36.514	-717.959	-637.885	-557.047	48.495
	700.00	99.998	192.003	125.554	-602.006	46.514	-736.408	-634.296	-543.858	40.583
	800.00	99.998	205.355	134.713	-592.006	56.514	-756.291	-630.747	-531.181	34.683
	900.00	99.998	217.133	143.230	-582.007	66.513	-777.427	-627.240	-518.946	30.119
	1000.00	99.998	227.669	151.156	-572.007	76.513	-799.676	-623.766	-507.100	26.488

References

Phase	H / S	C _p
SOL	Pa2	Pa2
LIQ	Pa2	Pa2

156.707

TIN DIFLUORIDE (GAS)

SnF2[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	49.679	282.124	282.124	-483.955	0.000	-568.070	-483.955	-492.343	86.256
	300.00	49.752	282.431	282.125	-483.863	0.092	-568.592	-483.971	-492.395	85.734
	400.00	52.738	297.194	284.117	-478.724	5.231	-597.602	-484.839	-495.073	64.650
	500.00	54.447	309.162	287.967	-473.358	10.597	-627.939	-485.809	-497.523	51.976
	600.00	55.484	319.188	292.358	-467.857	16.098	-659.370	-493.736	-498.458	43.395
	700.00	56.153	327.795	296.820	-462.273	21.682	-691.729	-494.563	-499.179	37.249
	800.00	56.608	335.324	301.172	-456.634	27.321	-724.893	-495.374	-499.783	32.632
	900.00	56.929	342.011	305.346	-450.956	32.999	-758.766	-496.189	-500.285	29.036
	1000.00	57.164	348.022	309.318	-445.251	38.704	-793.273	-497.009	-500.696	26.154
	1100.00	57.341	353.479	313.088	-439.525	44.430	-828.352	-497.835	-501.025	23.792
	1200.00	57.476	358.474	316.665	-433.784	50.171	-863.953	-498.668	-501.278	21.820
	1300.00	57.582	363.079	320.061	-428.031	55.924	-900.034	-499.506	-501.462	20.149
	1400.00	57.667	367.350	323.288	-422.268	61.687	-936.558	-500.351	-501.580	18.714
	1500.00	57.734	371.331	326.359	-416.498	67.457	-973.494	-501.203	-501.639	17.469
	1600.00	57.790	375.059	329.288	-410.722	73.233	-1010.816	-502.062	-501.640	16.377
	1700.00	57.835	378.564	332.084	-404.940	79.015	-1048.499	-502.928	-501.587	15.412
	1800.00	57.873	381.871	334.759	-399.155	84.800	-1086.522	-503.800	-501.483	14.553
	1900.00	57.904	385.000	337.322	-393.366	90.589	-1124.867	-504.679	-501.330	13.783
	2000.00	57.930	387.971	339.781	-387.574	96.381	-1163.517	-505.565	-501.131	13.088

References

Phase	H / S	C _p
GAS	Pa2	Pa2

SnH4[g]

TIN TETRAHYDRIDE (GAS)

122.742

Phase	T [K]	C _p [————— J / (K mol)]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	50.585	228.765	228.765	162.758	0.000	94.552	162.758	187.740	-32.891
	300.00	50.810	229.079	228.766	162.852	0.094	94.128	162.695	187.895	-32.715
	400.00	60.068	245.077	230.885	168.435	5.677	70.404	159.674	196.769	-25.695
	500.00	66.375	259.190	235.163	174.771	12.013	45.176	157.191	206.340	-21.556
	600.00	71.521	271.758	240.234	181.672	18.914	18.618	148.279	217.678	-18.951
	700.00	76.119	283.133	245.562	189.057	26.299	-9.136	146.928	229.358	-17.115
	800.00	80.425	293.581	250.920	196.887	34.129	-37.978	146.007	241.201	-15.749

References

Phase	H / S	C _p
GAS	Tk1	Tk1,e

SnI2

TIN DIIODIDE

372.519

Phase	T [K]	C _p [————— J / (K mol)]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	78.451	168.490	168.490	-143.888	0.000	-194.123	-143.888	-144.232	25.269
	300.00	78.510	168.975	168.491	-143.743	0.145	-194.435	-143.894	-144.234	25.113
	400.00	81.776	192.006	171.609	-135.729	8.159	-212.532	-160.311	-143.735	18.770
	500.00	85.093	210.610	177.606	-127.386	16.502	-232.691	-203.135	-135.477	14.153
	593.00	88.197	225.383	183.966	-119.328	24.560	-252.980	-208.319	-121.825	10.731
LIQ			30.339		17.991					
	593.00	99.998	255.722	183.966	-101.337	42.551	-252.980	-190.328	-121.825	10.731
	600.00	99.998	256.895	184.810	-100.637	43.251	-254.774	-190.093	-121.018	10.536
	700.00	99.998	272.310	196.238	-90.637	53.251	-281.254	-186.716	-109.772	8.191
	800.00	99.998	285.663	206.600	-80.638	63.250	-309.168	-183.333	-99.011	6.465
	900.00	99.998	297.441	216.052	-70.638	73.250	-338.335	-179.959	-88.673	5.146
	1000.00	99.998	307.977	224.727	-60.638	83.250	-368.615	-176.592	-78.711	4.111

References

Phase	H / S	C _p
SOL	Pa2	Pa2
LIQ	Pa2	Pa2

372.519

TIN DIIODIDE (GAS)

SnI2[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
GAS	298.15	56.437	343.289	343.290	-3.084	0.000	-105.436	-3.084	-55.544	9.731
	300.00	56.458	343.639	343.291	-2.980	0.104	-106.071	-3.130	-55.869	9.728
	400.00	57.210	359.999	345.516	2.709	5.793	-141.290	-21.873	-72.494	9.467
	500.00	57.561	372.807	349.740	8.450	11.534	-177.954	-67.300	-80.740	8.435
	600.00	57.752	383.320	354.487	14.216	17.300	-215.776	-75.240	-82.019	7.140
	700.00	57.870	392.232	359.258	19.998	23.082	-254.565	-76.081	-83.082	6.200
	800.00	57.947	399.965	363.874	25.789	28.873	-294.183	-76.907	-84.026	5.486
	900.00	58.001	406.794	368.271	31.586	34.670	-334.528	-77.735	-84.866	4.926
	1000.00	58.041	412.907	372.434	37.389	40.473	-375.518	-78.565	-85.614	4.472
	1100.00	58.072	418.440	376.369	43.194	46.278	-417.090	-79.399	-86.279	4.097
	1200.00	58.096	423.494	380.089	49.003	52.087	-459.190	-80.237	-86.867	3.781

References

Phase	H / S	C _p
GAS	H3	H3

626.328

TIN TETRAIODIDE

SnI4

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
SOL	298.15	131.961	282.713	282.713	-215.309	0.000	-299.600	-215.309	-215.080	37.681
	300.00	132.093	283.530	282.715	-215.065	0.244	-300.124	-215.316	-215.079	37.449
	400.00	136.863	322.274	287.966	-201.586	13.723	-330.495	-247.907	-213.813	27.921
	418.00	137.408	328.310	289.574	-199.117	16.192	-336.351	-248.865	-212.257	26.524
			46.043		19.246					
LIQ	418.00	167.762	374.353	289.574	-179.871	35.438	-336.351	-229.619	-212.257	26.524
	500.00	167.762	404.404	306.015	-166.115	49.194	-368.317	-311.797	-201.079	21.007
	600.00	167.762	434.990	325.040	-149.339	65.970	-410.333	-312.479	-178.209	15.514
	627.00	167.762	442.375	329.935	-144.809	70.500	-422.178	-310.755	-172.205	14.346

References

Phase	H / S	C _p	Remarks
SOL	Pa2	Pa2	
LIQ	Pa2	Pa2	Pa2 BPT= 627., L= 52.154 kJ

SnI4[g]

TIN TETRAIODIDE (GAS)

626.328

Phase	T [K]	C _p [————— J / (K mol)]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	105.313	446.375	446.375	-127.696	0.000	-260.783	-127.696	-176.263	30.881
	300.00	105.348	447.026	446.377	-127.501	0.195	-261.609	-127.753	-176.564	30.743
	400.00	106.556	477.524	450.527	-116.897	10.799	-307.907	-163.219	-191.224	24.971
	500.00	107.107	501.367	458.397	-106.211	21.485	-356.895	-251.894	-189.657	19.813
	600.00	107.399	520.924	467.237	-95.484	32.212	-408.038	-258.624	-175.914	15.315
	700.00	107.569	537.493	476.120	-84.735	42.961	-460.980	-258.261	-162.158	12.100
	800.00	107.673	551.864	484.710	-73.973	53.723	-515.464	-257.888	-148.454	9.693
	900.00	107.740	564.551	492.890	-63.202	64.494	-571.297	-257.522	-134.797	7.823
	1000.00	107.783	575.904	500.634	-52.425	75.271	-628.330	-257.167	-121.180	6.330

References

Phase	H / S	C _p
GAS	Pa2	Pa2

Sn2I4[g]

DITIN TETRAIODIDE (GAS)

745.038

Phase	T [K]	C _p [————— J / (K mol)]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	129.762	528.168	528.168	-107.169	0.000	-264.642	-107.169	-164.859	28.883
	300.00	129.802	528.971	528.170	-106.929	0.240	-265.620	-107.230	-165.217	28.767
	400.00	131.197	566.532	533.282	-93.869	13.300	-320.482	-143.033	-182.888	23.883
	500.00	131.848	595.886	542.974	-80.713	26.456	-378.656	-232.212	-184.229	19.246
	600.00	132.205	619.959	553.859	-67.509	39.660	-439.484	-246.421	-171.971	14.971
	700.00	132.424	640.356	564.796	-54.277	52.892	-502.526	-246.434	-159.561	11.907
	800.00	132.569	658.049	575.371	-41.027	66.142	-567.466	-246.418	-147.151	9.608
	900.00	132.671	673.670	585.442	-27.764	79.405	-634.067	-246.407	-134.744	7.820
	1000.00	132.747	687.652	594.976	-14.493	92.676	-702.145	-246.401	-122.337	6.390
	1100.00	132.805	700.307	603.986	-1.216	105.953	-771.553	-246.403	-109.931	5.220
	1200.00	132.851	711.864	612.501	12.067	119.236	-842.170	-246.413	-97.524	4.245

References

Phase	H / S	C _p
GAS	H3	H3

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	47.767	56.484	56.484	-285.770	0.000	-302.611	-285.770	-256.765	44.984
	300.00	47.851	56.780	56.485	-285.682	0.088	-302.715	-285.759	-256.585	44.675
	400.00	51.128	71.043	58.407	-280.716	5.054	-309.133	-285.071	-246.960	32.250
	500.00	53.137	82.681	62.134	-275.496	10.274	-316.837	-284.355	-237.516	24.813
	600.00	54.647	92.508	66.399	-270.105	15.665	-325.609	-290.498	-226.907	19.754
	700.00	55.922	101.029	70.750	-264.575	21.195	-335.295	-289.456	-216.389	16.147
	800.00	57.071	108.573	75.016	-258.924	26.846	-345.783	-288.319	-206.028	13.452
	900.00	58.148	115.357	79.127	-253.163	32.607	-356.985	-287.105	-195.813	11.365
	1000.00	59.178	121.538	83.064	-247.296	38.474	-368.834	-285.815	-185.738	9.702
	1100.00	60.180	127.225	86.823	-241.328	44.442	-381.276	-284.446	-175.796	8.348
	1200.00	61.161	132.504	90.413	-235.261	50.509	-394.265	-282.999	-165.982	7.225
	1300.00	62.128	137.437	93.842	-229.096	56.674	-407.765	-281.471	-156.292	6.280

References

Phase	H / S	C _p
SOL	Tk1	Pa1

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	31.587	232.112	232.112	20.857	0.000	-48.347	20.857	-2.501	0.438
	300.00	31.638	232.308	232.113	20.915	0.058	-48.777	20.838	-2.646	0.461
	400.00	33.464	241.695	233.380	24.183	3.326	-72.495	19.827	-10.323	1.348
	500.00	34.366	249.269	235.825	27.579	6.722	-97.056	18.720	-17.735	1.853
	600.00	34.904	255.586	238.607	31.044	10.187	-122.307	10.651	-23.605	2.055
	700.00	35.270	260.995	241.428	34.554	13.697	-148.143	9.673	-29.236	2.182
	800.00	35.545	265.724	244.176	38.095	17.238	-174.484	8.701	-34.729	2.268
	900.00	35.766	269.923	246.808	41.661	20.804	-201.270	7.719	-40.098	2.327
	1000.00	35.955	273.702	249.311	45.247	24.390	-228.454	6.729	-45.358	2.369
	1100.00	36.122	277.136	251.687	48.851	27.994	-255.999	5.733	-50.519	2.399
	1200.00	36.274	280.286	253.941	52.471	31.614	-283.872	4.734	-55.589	2.420
	1300.00	36.416	283.195	256.081	56.106	35.249	-312.048	3.731	-60.575	2.434
	1400.00	36.550	285.899	258.115	59.754	38.897	-340.504	2.728	-65.484	2.443
	1500.00	36.679	288.425	260.053	63.416	42.559	-369.222	1.724	-70.321	2.449
	1600.00	36.803	290.796	261.901	67.090	46.233	-398.184	0.719	-75.092	2.451
	1700.00	36.924	293.031	263.667	70.776	49.919	-427.376	-0.285	-79.799	2.452
	1800.00	37.043	295.145	265.357	74.474	53.617	-456.786	-1.290	-84.447	2.451
	1900.00	37.160	297.151	266.978	78.185	57.328	-486.402	-2.295	-89.040	2.448
	2000.00	37.275	299.060	268.535	81.906	61.049	-516.213	-3.300	-93.579	2.444

References

Phase	H / S	C _p
GAS	Tk1	e

SnO2

TIN DIOXIDE

150.709

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	52.594	52.342	52.342	-580.823	0.000	-596.429	-580.823	-520.000	91.102
	300.00	52.689	52.667	52.343	-580.726	0.097	-596.526	-580.830	-519.623	90.474
	400.00	60.599	68.847	54.495	-575.082	5.741	-602.621	-580.950	-499.187	65.187
	500.00	67.997	83.202	58.827	-568.635	12.188	-610.236	-580.536	-478.785	50.018
	600.00	73.425	96.106	63.983	-561.549	19.274	-619.213	-586.565	-457.197	39.803
	700.00	77.309	107.733	69.417	-554.002	26.821	-629.415	-585.132	-435.745	32.516
	800.00	80.094	118.248	74.875	-546.124	34.699	-640.723	-583.436	-414.517	27.065
	900.00	82.096	127.804	80.233	-538.009	42.814	-653.033	-581.572	-393.513	22.839
	1000.00	83.535	136.532	85.433	-529.723	51.100	-666.256	-579.593	-372.723	19.469
	1100.00	84.568	144.545	90.448	-521.315	59.508	-680.315	-577.540	-352.134	16.721
	1200.00	85.313	151.937	95.268	-512.819	68.004	-695.144	-575.438	-331.736	14.440
	1300.00	85.864	158.789	99.894	-504.259	76.564	-710.685	-573.306	-311.513	12.517
	1400.00	86.299	165.168	104.331	-495.651	85.172	-726.886	-571.155	-291.456	10.874
	1500.00	86.687	171.136	108.588	-487.001	93.822	-743.705	-568.992	-271.553	9.456
	1600.00	87.087	176.743	112.674	-478.313	102.510	-761.101	-566.816	-251.795	8.220
	1700.00	87.557	182.036	116.600	-469.581	111.242	-779.043	-564.622	-232.173	7.134
	1800.00	88.149	187.057	120.376	-460.797	120.026	-797.500	-562.399	-212.681	6.172

References

Phase	H / S	C _p
SOL	Tk1,Pa1	Pa1

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-A	298.15	49.257	76.986	76.986	-107.947	0.000	-130.900	-107.947	-106.079	18.585
	300.00	49.262	77.290	76.987	-107.856	0.091	-131.043	-107.948	-106.067	18.468
	400.00	50.562	91.602	78.929	-102.878	5.069	-139.519	-110.344	-105.330	13.755
	500.00	52.844	103.120	82.650	-97.712	10.235	-149.272	-112.054	-103.901	10.854
	600.00	55.513	112.986	86.902	-92.296	15.651	-160.088	-120.169	-100.832	8.778
	700.00	58.365	121.756	91.266	-86.604	21.343	-171.833	-120.646	-97.566	7.280
	800.00	61.315	129.742	95.583	-80.620	27.327	-184.413	-120.868	-94.252	6.154
	875.00	63.566	135.335	98.753	-75.937	32.010	-194.356	-120.980	-91.752	5.477
SOL-B			0.765		0.669					
	875.00	54.612	136.100	98.753	-75.268	32.679	-194.356	-120.311	-91.752	5.477
	900.00	55.003	137.644	99.812	-73.898	34.049	-197.778	-173.197	-89.786	5.211
	1000.00	56.568	143.520	103.892	-68.320	39.627	-211.839	-172.299	-80.565	4.208
	1100.00	58.132	148.985	107.746	-62.585	45.362	-226.468	-171.251	-71.441	3.392
	1154.00	58.977	151.791	109.742	-59.423	48.524	-234.589	-170.623	-66.557	3.013
LIQ			27.373		31.589					
	1154.00	74.894	179.164	109.742	-27.834	80.113	-234.589	-139.034	-66.557	3.013
	1200.00	74.894	182.092	112.460	-24.388	83.559	-242.899	-137.749	-63.693	2.772
	1300.00	74.894	188.086	118.050	-16.899	91.048	-261.411	-134.959	-57.635	2.316
	1400.00	74.894	193.637	123.253	-9.410	98.537	-280.501	-132.174	-51.791	1.932
	1483.00	74.894	197.950	127.314	-3.194	104.753	-296.754	-129.865	-47.093	1.659

References

Phase	H / S	C _p
SOL-A	Mi1	Mi1
SOL-B	Mi1	Mi1
LIQ	Mi1	Mi1

SnS[g]

TIN MONOSULFIDE (GAS)

150.776

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
GAS	298.15	34.456	242.363	242.363	112.550	0.000	40.289	112.550	65.111	-11.407
	300.00	34.488	242.576	242.364	112.614	0.064	39.841	112.522	64.817	-11.286
	400.00	35.640	252.679	243.733	116.128	3.578	15.057	108.662	49.245	-6.431
	500.00	36.192	260.697	246.352	119.723	7.173	-10.626	105.381	34.745	-3.630
	600.00	36.506	267.326	249.311	123.359	10.809	-37.037	95.486	22.219	-1.934
	700.00	36.709	272.970	252.298	127.020	14.470	-64.058	92.977	10.208	-0.762
	800.00	36.853	277.881	255.195	130.699	18.149	-91.606	90.451	-1.445	0.094
	900.00	36.962	282.229	257.962	134.390	21.840	-119.616	35.090	-11.625	0.675
	1000.00	37.049	286.128	260.587	138.090	25.540	-148.037	34.111	-16.763	0.876
	1100.00	37.123	289.662	263.072	141.799	29.249	-176.829	33.132	-21.803	1.035
	1200.00	37.187	292.895	265.425	145.515	32.965	-205.960	32.154	-26.754	1.165
	1300.00	37.244	295.874	267.654	149.236	36.686	-235.400	31.177	-31.623	1.271
	1400.00	37.296	298.636	269.769	152.963	40.413	-265.127	30.199	-36.417	1.359
	1500.00	37.345	301.211	271.781	156.695	44.145	-295.121	29.223	-41.142	1.433
	1600.00	37.390	303.622	273.696	160.432	47.882	-325.364	28.246	-45.801	1.495
	1700.00	37.434	305.891	275.524	164.173	51.623	-355.841	27.270	-50.399	1.549
	1800.00	37.476	308.031	277.271	167.919	55.369	-386.538	26.293	-54.939	1.594
	1900.00	37.517	310.059	278.944	171.668	59.118	-417.443	25.317	-59.426	1.634
	2000.00	37.557	311.984	280.548	175.422	62.872	-448.546	24.341	-63.861	1.668

References

Phase	H / S	C _p
GAS	Mi1	Ke1,Mi1

SnS2

TIN DISULFIDE

182.842

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
SOL	298.15	70.133	87.446	87.446	-153.553	0.000	-179.625	-153.553	-145.246	25.446
	300.00	70.166	87.880	87.447	-153.423	0.130	-179.787	-153.557	-145.194	25.281
	400.00	71.923	108.306	90.220	-146.319	7.234	-189.641	-158.408	-142.175	18.566
	500.00	73.680	124.544	95.515	-139.039	14.514	-201.310	-161.906	-137.759	14.392
	600.00	75.438	138.132	101.515	-131.583	21.970	-214.462	-171.557	-131.340	11.434
	700.00	77.195	149.893	107.605	-123.951	29.602	-228.876	-173.405	-124.486	9.289
	800.00	78.952	160.316	113.554	-116.144	37.409	-244.396	-175.162	-117.379	7.664
	900.00	80.709	169.716	119.281	-108.161	45.392	-260.905	-282.437	-107.746	6.253
	1000.00	82.467	178.311	124.760	-100.002	53.551	-278.313	-280.794	-88.423	4.619
	1038.00	83.134	181.399	126.777	-96.855	56.698	-285.148	-280.127	-81.125	4.082

References

Phase	H / S	C _p	Remarks
SOL	Mi1	Mi1	Mi1 MPT= 1038.

333.618

DITIN TRISULFIDE

Sn2S3

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		[————— J / (K mol) —————]		[—————]			[————— kJ / mol —————]			[- -]
SOL	298.15	120.125	164.431	164.431	-263.592	0.000	-312.617	-263.592	-253.417	44.398
	300.00	120.206	165.175	164.433	-263.370	0.222	-312.922	-263.596	-253.354	44.113
	400.00	124.600	200.357	169.201	-251.129	12.463	-331.272	-270.685	-249.618	32.597
	500.00	128.993	228.633	178.348	-238.450	25.142	-352.766	-275.659	-243.844	25.474
	600.00	133.386	252.539	188.771	-225.331	38.261	-376.854	-293.178	-234.476	20.413
	700.00	137.779	273.431	199.403	-211.773	51.819	-403.174	-295.269	-224.517	16.754
	800.00	142.172	292.115	209.844	-197.775	65.817	-431.467	-297.041	-214.289	13.992
	900.00	146.566	309.115	219.944	-183.338	80.254	-461.541	-456.914	-200.391	11.630
	1000.00	150.959	324.784	229.654	-168.462	95.130	-493.246	-453.234	-172.082	8.989

References

Phase	H / S	C _p
SOL	Mi1	Mi1

484.394

TRITIN TETRASULFIDE

Sn3S4

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		[————— J / (K mol) —————]		[—————]			[————— kJ / mol —————]			[- -]
SOL	298.15	169.546	243.509	243.509	-370.284	0.000	-442.886	-370.284	-358.864	62.872
	300.00	169.661	244.558	243.512	-369.970	0.314	-443.338	-370.289	-358.794	62.472
	400.00	175.895	294.220	250.241	-352.692	17.592	-470.380	-379.714	-354.538	46.298
	500.00	182.130	334.140	263.154	-334.791	35.493	-501.861	-386.343	-347.568	36.310
	600.00	188.364	367.897	277.868	-316.267	54.017	-537.005	-411.987	-335.371	29.197
	700.00	194.598	397.402	292.879	-297.118	73.166	-575.300	-414.658	-322.376	24.056
	800.00	200.832	423.793	307.622	-277.347	92.937	-616.382	-416.861	-309.042	20.178
	900.00	207.066	447.808	321.884	-256.952	113.332	-659.979	-629.827	-290.838	16.880
	983.00	212.241	466.299	333.305	-239.551	130.733	-697.923	-625.601	-259.761	13.803

References

Phase	H / S	C _p	Remarks
SOL	Mi1	Mi1	Mi1 MPT= 983.

SnSO4

TIN MONOSULFATE

214.774

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	150.632	138.574	138.574	-887.008	0.000	-928.324	-887.008	-781.173	136.858
	300.00	150.833	139.506	138.577	-886.729	0.279	-928.581	-886.930	-780.517	135.900
	400.00	161.712	184.388	144.623	-871.102	15.906	-944.857	-884.619	-745.623	97.368
	500.00	172.590	221.642	156.400	-854.387	32.621	-965.208	-880.898	-711.313	74.310
	600.00	183.468	254.070	170.030	-836.584	50.424	-989.026	-882.945	-676.517	58.896
	700.00	194.347	283.169	184.148	-817.693	69.315	-1015.911	-876.733	-642.590	47.951
	800.00	205.225	309.831	198.214	-797.715	89.293	-1045.579	-869.633	-609.616	39.804
	900.00	216.104	334.631	212.009	-776.648	110.360	-1077.816	-914.429	-576.431	33.455

References

Phase	H / S	C _p
SOL	Tk1/Ku1	e

Sn(SO4)2

TIN DISULFATE

310.837

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	284.512	149.787	149.787	-1648.496	0.000	-1693.155	-1648.496	-1414.118	247.748
	300.00	284.512	151.547	149.793	-1647.970	0.526	-1693.434	-1648.321	-1412.664	245.967
	400.00	284.512	233.396	160.952	-1619.518	28.978	-1712.877	-1643.710	-1335.319	174.375
	500.00	284.512	296.883	182.026	-1591.067	57.429	-1739.509	-1638.272	-1258.909	131.517
	600.00	284.512	348.756	205.623	-1562.616	85.880	-1771.870	-1639.566	-1182.241	102.923
	700.00	284.512	392.614	229.283	-1534.165	114.331	-1808.994	-1633.613	-1106.494	82.568

References

Phase	H / S	C _p
SOL	Tk1/e	e

197.670 TIN MONOSELENIDE SnSe										
Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [————— kJ / mol —————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	50.605	89.538	89.538	-88.701	0.000	-115.397	-88.701	-87.533	15.335
	300.00	50.626	89.851	89.539	-88.607	0.094	-115.563	-88.704	-87.526	15.240
	400.00	51.798	104.575	91.538	-83.486	5.215	-125.316	-89.044	-87.091	11.373
	500.00	52.969	116.260	95.353	-78.248	10.453	-136.378	-95.589	-86.450	9.031
	600.00	54.141	126.021	99.673	-72.892	15.809	-148.505	-103.703	-83.195	7.243
	700.00	55.312	134.455	104.053	-67.420	21.281	-161.538	-104.605	-79.704	5.948
	800.00	56.484	141.917	108.328	-61.830	26.871	-175.363	-105.375	-76.092	4.968
	900.00	57.656	148.637	112.439	-56.123	32.578	-189.897	-106.028	-72.392	4.202
	1000.00	58.827	154.773	116.370	-50.299	38.402	-205.071	-106.563	-68.625	3.585
	1100.00	59.999	160.434	120.122	-44.357	44.344	-220.835	-160.293	-59.855	2.842
	1153.00	60.619	163.272	122.041	-41.161	47.540	-229.414	-159.702	-55.030	2.493

References

Phase	H / S	C _p	Remarks
SOL	Mi1	Mi1	Mi1 TPT= 813., MPT= 1153.

197.670 TIN MONOSELENIDE (GAS) SnSe[g]										
Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [————— kJ / mol —————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	35.904	254.497	254.497	126.775	0.000	50.897	126.775	78.760	-13.798
	300.00	35.922	254.719	254.497	126.841	0.066	50.426	126.744	78.462	-13.661
	400.00	36.552	265.152	255.916	130.470	3.695	24.409	124.912	62.634	-8.179
	500.00	36.844	273.344	258.611	134.141	7.366	-2.531	116.800	47.397	-4.951
	600.00	37.003	280.076	261.644	137.834	11.059	-30.212	107.023	35.098	-3.056
	700.00	37.098	285.788	264.696	141.540	14.765	-58.512	104.354	23.322	-1.740
	800.00	37.160	290.746	267.649	145.253	18.478	-87.344	101.707	11.927	-0.779
	900.00	37.203	295.126	270.464	148.971	22.196	-116.642	99.066	0.863	-0.050
	1000.00	37.233	299.047	273.129	152.693	25.918	-146.354	96.428	-9.907	0.518
	1100.00	37.256	302.597	275.649	156.418	29.643	-176.439	40.482	-15.459	0.734
	1200.00	37.273	305.839	278.032	160.144	33.369	-206.863	39.295	-20.492	0.892
	1300.00	37.286	308.823	280.287	163.872	37.097	-237.599	38.122	-25.427	1.022
	1400.00	37.297	311.587	282.426	167.601	40.826	-268.621	36.962	-30.272	1.129
	1500.00	37.305	314.161	284.456	171.331	44.556	-299.910	35.816	-35.034	1.220
	1600.00	37.312	316.568	286.389	175.062	48.287	-331.447	34.683	-39.720	1.297
	1700.00	37.318	318.831	288.231	178.794	52.019	-363.218	33.563	-44.336	1.362
	1800.00	37.323	320.964	289.991	182.526	55.751	-395.209	32.456	-48.887	1.419
	1900.00	37.327	322.982	291.675	186.258	59.483	-427.407	31.363	-53.376	1.467
	2000.00	37.331	324.897	293.289	189.991	63.216	-459.802	30.283	-57.808	1.510

References

Phase	H / S	C _p
GAS	Mi1	Mi1

SnSe2

TIN DISELENIDE

276.630

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
SOL	298.15	74.643	111.713	111.713	-117.152	0.000	-150.459	-117.152	-109.997	19.271
	300.00	74.689	112.175	111.714	-117.014	0.138	-150.666	-117.158	-109.952	19.144
	400.00	76.776	133.965	114.671	-109.434	7.718	-163.020	-117.707	-107.481	14.036
	500.00	78.366	151.274	120.319	-101.675	15.477	-177.312	-130.541	-104.647	10.932
	600.00	79.747	165.686	126.712	-93.768	23.384	-193.179	-139.619	-97.950	8.527
	700.00	81.044	178.077	133.185	-85.728	31.424	-210.382	-141.468	-90.856	6.780

References

Phase	H / S	C _p	Remarks
SOL	Pa3	Pa3	Mi1 MPT= 948.

SnTe

TIN MONOTELLURIDE

246.310

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
SOL	298.15	51.466	99.998	99.998	-61.923	0.000	-91.737	-61.923	-61.716	10.812
	300.00	51.488	100.316	99.999	-61.828	0.095	-91.923	-61.925	-61.715	10.745
	400.00	52.668	115.290	102.032	-56.620	5.303	-102.736	-62.196	-61.612	8.046
	500.00	53.848	127.169	105.911	-51.294	10.629	-114.879	-62.750	-61.407	6.415
	600.00	55.028	137.091	110.303	-45.850	16.073	-128.105	-70.388	-59.760	5.203
	700.00	56.208	145.662	114.756	-40.289	21.634	-142.252	-71.035	-57.938	4.323
	800.00	57.388	153.245	119.102	-34.609	27.314	-157.205	-89.390	-54.139	3.535
	900.00	58.568	160.072	123.281	-28.811	33.112	-172.876	-90.203	-49.682	2.883
	1000.00	59.748	166.304	127.276	-22.895	39.028	-189.199	-90.898	-45.141	2.358
	1079.00	60.680	170.882	130.303	-18.138	43.785	-202.520	-91.364	-41.508	2.009
LIQ			31.021		33.472					
	1079.00	63.597	201.903	130.303	15.334	77.257	-202.520	-57.892	-41.508	2.009
	1100.00	63.597	203.129	131.682	16.669	78.592	-206.773	-57.945	-41.189	1.956
	1200.00	63.597	208.663	137.870	23.029	84.952	-227.366	-58.196	-39.655	1.726
	1300.00	63.597	213.753	143.514	29.389	91.312	-248.491	-58.447	-38.099	1.531
	1400.00	63.597	218.466	148.701	35.748	97.671	-270.105	-105.137	-34.033	1.270
	1500.00	63.597	222.854	153.500	42.108	104.031	-292.173	-103.814	-29.001	1.010
	1600.00	63.597	226.958	157.964	48.468	110.391	-314.666	-102.483	-24.056	0.785
	1700.00	63.597	230.814	162.137	54.827	116.750	-337.557	-101.148	-19.196	0.590

References

Phase	H / S	C _p
SOL	Mi1	Mi1
LIQ	Mi1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	36.482	262.446	262.446	160.247	0.000	81.999	160.247	112.020	-19.625
	300.00	36.495	262.672	262.447	160.315	0.068	81.513	160.217	111.721	-19.452
	400.00	36.943	273.241	263.885	163.990	3.743	54.693	158.414	95.817	-12.512
	500.00	37.150	281.510	266.613	167.695	7.448	26.940	156.240	80.412	-8.401
	600.00	37.262	288.294	269.678	171.416	11.169	-1.560	146.879	66.785	-5.814
	700.00	37.330	294.043	272.759	175.146	14.899	-30.684	144.400	53.630	-4.002
	800.00	37.374	299.031	275.738	178.882	18.635	-60.343	124.100	42.723	-2.790
	900.00	37.404	303.435	278.575	182.621	22.374	-90.471	121.228	32.723	-1.899
	1000.00	37.426	307.377	281.262	186.362	26.115	-121.015	118.359	23.043	-1.204
	1100.00	37.442	310.945	283.801	190.106	29.859	-151.934	115.492	13.650	-0.648
	1200.00	37.454	314.203	286.200	193.851	33.604	-183.194	112.626	4.518	-0.197
	1300.00	37.463	317.202	288.471	197.596	37.349	-214.766	109.761	-4.374	0.176
	1400.00	37.471	319.978	290.624	201.343	41.096	-246.627	60.458	-10.555	0.394
	1500.00	37.477	322.564	292.668	205.091	44.844	-278.755	59.169	-15.583	0.543
	1600.00	37.482	324.983	294.613	208.839	48.592	-311.134	57.888	-20.524	0.670
	1700.00	37.486	327.255	296.467	212.587	52.340	-343.747	56.612	-25.386	0.780
	1800.00	37.490	329.398	298.237	216.336	56.089	-376.580	55.341	-30.173	0.876
	1900.00	37.492	331.425	299.931	220.085	59.838	-409.622	54.079	-34.889	0.959
	2000.00	37.495	333.348	301.554	223.834	63.587	-442.862	52.829	-39.539	1.033

References

Phase	H / S	C _p
GAS	Mi1	Tk1,e

Phase	T [K]	C _p [— J / (K mol) —]	S — J / (K mol) —	—(G–H298)/T — [—] —	H [—] —	H–H298 kJ / mol	G [—] —	ΔH _f [—] —	ΔG _f [—] —	log K _f [—] —
SOL–A	298.15	26.747	55.690	55.690	0.000	0.000	–16.604	0.000	0.000	0.000
	300.00	26.771	55.856	55.691	0.050	0.050	–16.707	0.000	0.000	0.000
	400.00	28.407	63.774	56.759	2.806	2.806	–22.704	0.000	0.000	0.000
	500.00	30.121	70.296	58.832	5.732	5.732	–29.416	0.000	0.000	0.000
	600.00	32.006	75.950	61.223	8.836	8.836	–36.734	0.000	0.000	0.000
	700.00	34.223	81.045	63.696	12.144	12.144	–44.587	0.000	0.000	0.000
	800.00	36.818	85.780	66.164	15.693	15.693	–52.931	0.000	0.000	0.000
	820.00	37.381	86.696	66.654	16.435	16.435	–54.656	0.000	0.000	0.000
SOL–C			1.021		0.837					
	820.00	37.656	87.717	66.654	17.272	17.272	–54.656	0.000	0.000	0.000
	900.00	37.656	91.222	68.684	20.285	20.285	–61.816	0.000	0.000	0.000
	1000.00	37.656	95.190	71.140	24.050	24.050	–71.140	0.000	0.000	0.000
	1050.00	37.656	97.027	72.329	25.933	25.933	–75.946	0.000	0.000	0.000
LIQ			7.077		7.431					
	1050.00	35.146	104.104	72.329	33.364	33.364	–75.946	0.000	0.000	0.000
	1100.00	35.146	105.739	73.811	35.121	35.121	–81.192	0.000	0.000	0.000
	1200.00	35.146	108.797	76.601	38.636	38.636	–91.921	0.000	0.000	0.000
	1300.00	35.146	111.610	79.187	42.150	42.150	–102.943	0.000	0.000	0.000
	1400.00	35.146	114.215	81.597	45.665	45.665	–114.236	0.000	0.000	0.000
	1500.00	35.146	116.640	83.854	49.179	49.179	–125.780	0.000	0.000	0.000
	1600.00	35.146	118.908	85.974	52.694	52.694	–137.559	0.000	0.000	0.000
	1685.49	35.146	120.738	87.692	55.699	55.699	–147.803	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL–A	Ja2	Ja1	
SOL–C	Ja2	Ja1	
LIQ	Ja2	Ja1	Ja2 BPT= 1685.492, L= 137.185 kJ

87.620

STRONTIUM (GAS)

Sr[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _r [-]
GAS	298.15	20.786	164.640	164.640	164.000	0.000	114.913	164.000	131.517	-23.041
	300.00	20.786	164.769	164.640	164.038	0.038	114.608	163.989	131.315	-22.864
	400.00	20.786	170.748	165.456	166.117	2.117	97.818	163.311	120.521	-15.738
	500.00	20.786	175.387	166.995	168.196	4.196	80.502	162.464	109.918	-11.483
	600.00	20.786	179.176	168.719	170.274	6.274	62.768	161.438	99.502	-8.662
	700.00	20.786	182.381	170.448	172.353	8.353	44.686	160.209	89.274	-6.662
	800.00	20.786	185.156	172.117	174.432	10.432	26.307	158.738	79.238	-5.174
	900.00	20.786	187.604	173.704	176.510	12.510	7.666	156.226	69.482	-4.033
	1000.00	20.786	189.794	175.206	178.589	14.589	-11.206	154.539	59.934	-3.131
	1100.00	20.786	191.776	176.623	180.667	16.667	-30.286	145.546	50.906	-2.417
	1200.00	20.786	193.584	177.963	182.746	18.746	-49.555	144.110	42.366	-1.844
	1300.00	20.786	195.248	179.229	184.825	20.825	-68.998	142.674	33.945	-1.364
	1400.00	20.789	196.789	180.429	186.903	22.903	-88.601	141.238	25.635	-0.956
	1500.00	20.798	198.223	181.568	188.983	24.983	-108.352	139.803	17.428	-0.607
	1600.00	20.813	199.566	182.651	191.063	27.063	-128.242	138.369	9.317	-0.304
	1700.00	20.835	200.828	183.684	193.145	29.145	-148.263	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Ja2,Hu1	Hu1

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
			J / (K mol)				kJ / mol			
SOL	298.15	257.558	312.126	312.126	-3317.075	0.000	-3410.135	-3317.075	-3094.374	542.121
	300.00	258.127	313.721	312.131	-3316.598	0.477	-3410.714	-3317.055	-3092.992	538.538
	400.00	279.964	391.311	322.562	-3289.575	27.500	-3446.100	-3315.199	-3018.550	394.182
	500.00	292.930	455.271	342.897	-3260.888	56.187	-3488.524	-3312.659	-2944.675	307.628
	600.00	302.405	509.550	366.263	-3231.103	85.972	-3536.833	-3310.068	-2871.324	249.971
	700.00	310.230	556.769	390.178	-3200.461	116.614	-3590.199	-3307.726	-2798.390	208.818
	800.00	317.178	598.655	413.668	-3169.085	147.990	-3648.009	-3305.809	-2725.764	177.974
	900.00	323.614	636.388	436.353	-3137.043	180.032	-3709.792	-3306.727	-2653.108	153.982
	1000.00	329.733	670.803	458.102	-3104.373	212.702	-3775.177	-3304.822	-2580.583	134.796
	1100.00	335.644	702.509	478.898	-3071.103	245.972	-3843.863	-3324.476	-2507.213	119.058
	1200.00	341.415	731.962	498.774	-3037.249	279.826	-3915.604	-3321.263	-2433.057	105.908
	1300.00	347.086	759.514	517.782	-3002.823	314.252	-3990.192	-3318.188	-2359.168	94.793
	1400.00	352.685	785.441	535.984	-2967.834	349.241	-4067.452	-3315.752	-2285.494	85.273
	1500.00	358.230	809.964	553.439	-2932.288	384.787	-4147.233	-3507.548	-2199.101	76.580
	1600.00	363.735	833.259	570.206	-2896.190	420.885	-4229.404	-3500.396	-2112.102	68.953
	1700.00	369.209	855.475	586.338	-2859.542	457.533	-4313.849	-3903.608	-2029.449	62.357
	1800.00	374.658	876.733	601.885	-2822.349	494.726	-4400.467	-3891.273	-1919.558	55.704
	1900.00	380.087	897.135	616.891	-2784.611	532.464	-4489.167	-3878.500	-1810.364	49.770
	1903.00	380.250	897.735	617.333	-2783.471	533.604	-4491.860	-3878.110	-1807.099	49.602

References

Phase	H / S	C _p
SOL	Nb1/G1	G1

167.524

STRONTIUM MONOBROMIDE (GAS)

SrBr[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [—]
GAS	298.15	36.860	263.747	263.748	-89.119	0.000	-167.755	-89.119	-128.461	22.506
	300.00	36.869	263.976	263.748	-89.051	0.068	-168.243	-89.170	-128.705	22.409
	400.00	37.222	274.637	265.199	-85.344	3.775	-195.199	-105.461	-138.587	18.098
	500.00	37.416	282.965	267.950	-81.611	7.508	-223.094	-106.500	-146.752	15.331
	600.00	37.547	289.799	271.039	-77.863	11.256	-251.742	-107.715	-154.691	13.467
	700.00	37.648	295.595	274.143	-74.103	15.016	-281.019	-109.131	-162.411	12.119
	800.00	37.733	300.627	277.146	-70.334	18.785	-310.836	-110.785	-169.913	11.094
	900.00	37.809	305.076	280.007	-66.557	22.562	-341.125	-113.478	-177.111	10.279
	1000.00	37.879	309.063	282.717	-62.772	26.347	-371.836	-115.342	-184.082	9.615
	1100.00	37.946	312.677	285.279	-58.981	30.138	-402.926	-124.508	-190.515	9.047
	1200.00	38.010	315.981	287.702	-55.183	33.936	-434.361	-126.114	-196.444	8.551
	1300.00	38.073	319.026	289.996	-51.379	37.740	-466.113	-127.718	-202.240	8.126
	1400.00	38.134	321.850	292.171	-47.569	41.550	-498.159	-129.318	-207.912	7.757
	1500.00	38.194	324.483	294.239	-43.752	45.367	-530.477	-130.914	-213.471	7.434
	1600.00	38.253	326.950	296.207	-39.930	49.189	-563.050	-132.508	-218.922	7.147
	1700.00	38.312	329.271	298.084	-36.102	53.017	-595.862	-271.035	-225.569	6.931
	1800.00	38.370	331.462	299.878	-32.268	56.851	-628.900	-271.192	-222.890	6.468
	1900.00	38.428	333.538	301.596	-28.428	60.691	-662.151	-271.349	-220.203	6.054
	2000.00	38.486	335.511	303.243	-24.582	64.537	-695.604	-271.507	-217.507	5.681

References

Phase	H / S	C _p
GAS	Pa2	Pa2

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-A	298.15	76.857	143.511	143.511	-717.974	0.000	-760.762	-717.974	-698.777	122.423
	300.00	76.897	143.987	143.513	-717.832	0.142	-761.028	-718.021	-698.657	121.647
	400.00	79.032	166.408	146.555	-710.033	7.941	-776.596	-747.461	-686.076	89.592
	500.00	80.844	184.242	152.369	-702.038	15.936	-794.158	-746.084	-670.890	70.087
	600.00	82.679	199.140	158.955	-693.863	24.111	-813.347	-744.732	-655.978	57.108
	700.00	84.866	212.043	165.637	-685.490	32.484	-833.920	-743.402	-641.291	47.854
	800.00	87.599	223.547	172.169	-676.872	41.102	-855.709	-742.080	-626.794	40.925
	900.00	90.993	234.054	178.469	-667.948	50.026	-878.596	-741.505	-612.384	35.542
	918.00	91.679	235.863	179.577	-666.304	51.670	-882.826	-741.217	-609.804	34.698
			13.308		12.217					
SOL-B	918.00	115.060	249.171	179.577	-654.087	63.887	-882.826	-729.000	-609.804	34.698
	930.00	115.060	250.665	180.485	-652.706	65.268	-885.825	-728.522	-608.249	34.163
			10.887		10.125					
LIQ	930.00	116.391	261.552	180.485	-642.581	75.393	-885.825	-718.397	-608.249	34.163
	1000.00	116.391	269.999	186.459	-634.434	83.540	-904.433	-715.523	-600.064	31.344
	1100.00	116.391	281.092	194.565	-622.795	95.179	-931.996	-718.728	-588.366	27.939
	1200.00	116.391	291.219	202.204	-611.156	106.818	-960.619	-714.383	-576.706	25.103
	1300.00	116.391	300.535	209.414	-599.517	118.457	-990.213	-710.044	-565.409	22.718
	1400.00	116.391	309.161	216.235	-587.878	130.096	-1020.703	-705.711	-554.446	20.687
	1500.00	116.391	317.191	222.701	-576.239	141.735	-1052.025	-701.383	-543.793	18.937
	1600.00	116.391	324.703	228.844	-564.600	153.374	-1084.124	-697.061	-533.428	17.415
	1700.00	116.391	331.759	234.692	-552.961	165.013	-1116.951	-829.682	-524.627	16.120
	1800.00	116.391	338.412	240.271	-541.322	176.652	-1150.462	-823.940	-506.849	14.708
	1900.00	116.391	344.704	245.604	-529.682	188.292	-1184.621	-818.207	-489.389	13.454
	2000.00	116.391	350.674	250.709	-518.043	199.931	-1219.392	-812.483	-472.231	12.333
	2100.00	116.391	356.353	255.606	-506.404	211.570	-1254.746	-806.769	-455.359	11.326
	2200.00	116.391	361.768	260.309	-494.765	223.209	-1290.654	-801.064	-438.759	10.417
	2300.00	116.391	366.941	264.834	-483.126	234.848	-1327.092	-795.370	-422.418	9.593
	2400.00	116.391	371.895	269.192	-471.487	246.487	-1364.035	-789.688	-406.324	8.843
	2416.00	116.391	372.668	269.875	-469.625	248.349	-1369.992	-788.780	-403.772	8.730

References

Phase	H / S	C _p	Remarks
SOL-A	Ja1	Ja1	
SOL-B	Ja1	Ja1	
LIQ	Ja1	Ja1	BPT= 2416., L= 194.1 kJ

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	60.894	323.533	323.533	-407.103	0.000	-503.564	-407.103	-441.579	77.363
	300.00	60.911	323.909	323.534	-406.990	0.113	-504.163	-407.180	-441.793	76.923
	400.00	61.522	341.528	325.932	-400.865	6.238	-537.476	-438.293	-446.956	58.366
	500.00	61.815	355.291	330.477	-394.696	12.407	-572.342	-438.742	-449.073	46.914
	600.00	61.978	366.577	335.582	-388.506	18.597	-608.452	-439.374	-451.083	39.270
	700.00	62.077	376.139	340.710	-382.303	24.800	-645.600	-440.215	-452.971	33.801
	800.00	62.142	384.433	345.668	-376.092	31.011	-683.638	-441.300	-454.722	29.690
	900.00	62.187	391.755	350.390	-369.875	37.228	-722.454	-443.432	-456.241	26.480
	1000.00	62.219	398.308	354.860	-363.655	43.448	-761.963	-444.743	-457.594	23.902
	1100.00	62.243	404.240	359.084	-357.431	49.672	-802.095	-453.364	-458.465	21.771
	1200.00	62.261	409.656	363.076	-351.206	55.897	-842.794	-454.433	-458.881	19.975
	1300.00	62.276	414.641	366.853	-344.979	62.124	-884.012	-455.506	-459.209	18.451
	1400.00	62.287	419.256	370.433	-338.751	68.352	-925.710	-456.584	-459.453	17.142
	1500.00	62.296	423.554	373.833	-332.522	74.581	-967.853	-457.667	-459.620	16.005
	1600.00	62.304	427.575	377.068	-326.292	80.811	-1010.411	-458.754	-459.715	15.008
	1700.00	62.310	431.352	380.151	-320.061	87.042	-1053.360	-596.782	-461.036	14.166
	1800.00	62.315	434.914	383.095	-313.830	93.273	-1096.675	-596.449	-453.061	13.147
	1900.00	62.319	438.283	385.912	-307.598	99.505	-1140.336	-596.123	-445.104	12.237
	2000.00	62.323	441.480	388.611	-301.366	105.737	-1184.325	-595.806	-437.164	11.418
	2100.00	62.326	444.520	391.202	-295.134	111.969	-1228.627	-595.498	-429.239	10.677
	2200.00	62.329	447.420	393.692	-288.901	118.202	-1273.225	-595.200	-421.329	10.004
	2300.00	62.331	450.191	396.088	-282.668	124.435	-1318.106	-594.912	-413.433	9.389
	2400.00	62.333	452.843	398.398	-276.435	130.668	-1363.259	-594.636	-405.548	8.827
	2500.00	62.335	455.388	400.627	-270.201	136.902	-1408.671	-594.371	-397.675	8.309
	2600.00	62.337	457.833	402.781	-263.968	143.135	-1454.333	-594.118	-389.812	7.831
	2700.00	62.338	460.186	404.864	-257.734	149.369	-1500.235	-593.879	-381.959	7.389
	2800.00	62.339	462.453	406.880	-251.500	155.603	-1546.367	-593.653	-374.114	6.979
	2900.00	62.340	464.640	408.834	-245.266	161.837	-1592.723	-593.442	-366.277	6.597
	3000.00	62.341	466.754	410.730	-239.032	168.071	-1639.293	-593.246	-358.447	6.241

References

Phase	H / S	C _p
GAS	Ja1	Ja1

SrC2

STRONTIUM DICARBIDE

111.642

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	63.043	71.128	71.128	-74.998	0.000	-96.205	-74.998	-76.178	13.346
	300.00	63.174	71.518	71.129	-74.881	0.117	-96.337	-74.962	-76.185	13.265
	400.00	68.168	90.456	73.677	-68.287	6.711	-104.469	-73.198	-76.868	10.038
	500.00	71.086	106.003	78.635	-61.314	13.684	-114.315	-71.814	-77.954	8.144
	600.00	73.187	119.157	84.320	-54.096	20.902	-125.590	-70.860	-79.279	6.902
	700.00	74.903	130.571	90.130	-46.689	28.309	-138.089	-70.318	-80.731	6.024
	800.00	76.413	140.674	95.829	-39.122	35.876	-151.661	-70.148	-82.234	5.369
	900.00	77.803	149.755	101.324	-31.410	43.588	-166.190	-71.093	-83.658	4.855
	1000.00	79.119	158.021	106.587	-23.564	51.434	-181.585	-71.251	-85.045	4.442

References

Phase	H / S	C _p
SOL	Nb1/Ku1	e

SrCO3

STRONTIUM CARBONATE

147.629

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL-A	298.15	84.315	97.069	97.069	-1219.845	0.000	-1248.786	-1219.845	-1138.724	199.500
	300.00	84.578	97.591	97.070	-1219.689	0.156	-1248.966	-1219.836	-1138.220	198.182
	400.00	95.067	123.502	100.532	-1210.657	9.188	-1260.058	-1219.054	-1111.121	145.098
	500.00	101.845	145.483	107.381	-1200.794	19.051	-1273.535	-1218.036	-1084.254	113.271
	600.00	107.163	164.536	115.354	-1190.336	29.509	-1289.057	-1217.001	-1057.595	92.072
	700.00	111.792	181.409	123.607	-1179.384	40.461	-1306.370	-1216.018	-1031.106	76.942
	800.00	116.053	196.618	131.798	-1167.989	51.856	-1325.284	-1215.102	-1004.753	65.604
	900.00	120.101	210.523	139.784	-1156.180	63.665	-1345.650	-1215.025	-978.431	56.787
	1000.00	124.015	223.380	147.508	-1143.973	75.872	-1367.353	-1213.896	-952.201	49.738
	1100.00	127.844	235.380	154.957	-1131.380	88.465	-1390.298	-1219.827	-925.745	43.960
	1197.00	131.500	246.336	161.922	-1118.801	101.044	-1413.666	-1217.998	-899.889	39.269
SOL-B			16.429		19.665					
	1197.00	142.256	262.765	161.922	-1099.136	120.709	-1413.666	-1198.333	-899.889	39.269
	1200.00	142.256	263.121	162.175	-1098.710	121.135	-1414.455	-1198.240	-899.141	39.139
	1300.00	142.256	274.508	170.384	-1084.484	135.361	-1441.344	-1195.195	-874.341	35.131
	1400.00	142.256	285.050	178.202	-1070.258	149.587	-1469.328	-1192.233	-849.771	31.705

References

Phase	H / S	C _p
SOL-A	St1	St1
SOL-B	St1	e

123.073

STRONTIUM MONOCHLORIDE (GAS)

SrCl[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	36.251	252.279	252.279	-123.846	0.000	-199.063	-123.846	-149.198	26.139
	300.00	36.266	252.503	252.280	-123.779	0.067	-199.530	-123.860	-149.355	26.005
	400.00	36.856	263.028	253.711	-120.119	3.727	-225.330	-124.690	-157.733	20.598
	500.00	37.172	271.289	256.430	-116.416	7.430	-252.061	-125.699	-165.881	17.329
	600.00	37.372	278.085	259.489	-112.689	11.157	-279.540	-126.893	-173.809	15.131
	700.00	37.515	283.857	262.568	-108.944	14.902	-307.644	-128.295	-181.520	13.545
	800.00	37.627	288.874	265.550	-105.187	18.659	-336.286	-129.939	-189.015	12.341
	900.00	37.721	293.311	268.393	-101.419	22.427	-365.399	-132.626	-196.207	11.388
	1000.00	37.803	297.290	271.087	-97.643	26.203	-394.933	-134.486	-203.172	10.613
	1100.00	37.877	300.897	273.635	-93.859	29.987	-424.845	-143.649	-209.600	9.953
	1200.00	37.946	304.195	276.047	-90.068	33.778	-455.102	-145.255	-215.524	9.382
	1300.00	38.011	307.235	278.330	-86.270	37.576	-485.675	-146.858	-221.315	8.893
	1400.00	38.073	310.054	280.497	-82.466	41.380	-516.542	-148.459	-226.983	8.469
	1500.00	38.134	312.683	282.556	-78.655	45.191	-547.680	-150.057	-232.536	8.098
	1600.00	38.209	315.146	284.517	-74.838	49.008	-579.073	-151.653	-237.982	7.769
	1700.00	38.273	317.465	286.387	-71.014	52.832	-610.704	-290.182	-244.624	7.516
	1800.00	38.329	319.654	288.175	-67.184	56.662	-642.561	-290.342	-241.939	7.021
	1900.00	38.389	321.728	289.887	-63.348	60.498	-674.631	-290.503	-239.246	6.577
	2000.00	38.457	323.699	291.529	-59.506	64.340	-706.904	-290.665	-236.544	6.178
	2100.00	38.538	325.577	293.106	-55.656	68.190	-739.368	-290.828	-233.834	5.816
	2200.00	38.632	327.372	294.623	-51.798	72.048	-772.016	-290.991	-231.116	5.487
	2300.00	38.741	329.092	296.084	-47.929	75.917	-804.840	-291.154	-228.390	5.187
	2400.00	38.863	330.743	297.494	-44.049	79.797	-837.832	-291.317	-225.658	4.911
	2500.00	38.998	332.332	298.856	-40.156	83.690	-870.986	-291.477	-222.919	4.658
	2600.00	39.145	333.864	300.173	-36.249	87.597	-904.297	-291.636	-220.174	4.423
	2700.00	39.304	335.345	301.449	-32.327	91.519	-937.758	-291.793	-217.422	4.206
	2800.00	39.474	336.777	302.685	-28.388	95.458	-971.364	-291.947	-214.665	4.005
	2900.00	39.654	338.165	303.885	-24.432	99.414	-1005.112	-292.099	-211.902	3.817
	3000.00	39.843	339.513	305.050	-20.457	103.389	-1038.996	-292.248	-209.134	3.641

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	75.592	114.809	114.809	-828.850	0.000	-863.080	-828.850	-779.954	136.645
	300.00	75.655	115.277	114.810	-828.710	0.140	-863.293	-828.822	-779.651	135.749
	400.00	78.890	137.503	117.819	-820.976	7.874	-875.977	-827.312	-763.487	99.701
	500.00	81.319	155.377	123.600	-812.962	15.888	-890.650	-825.794	-747.707	78.112
	600.00	83.660	170.406	130.181	-804.715	24.135	-906.959	-824.287	-732.231	63.746
	700.00	86.579	183.511	136.882	-796.210	32.640	-924.668	-822.767	-717.008	53.504
	800.00	90.793	195.347	143.461	-787.341	41.509	-943.619	-821.153	-702.008	45.836
	900.00	96.977	206.372	149.844	-777.975	50.875	-963.710	-820.103	-687.141	39.881
	1000.00	105.826	217.024	156.031	-767.857	60.993	-984.881	-817.492	-672.499	35.128
	1100.00	123.010	227.916	162.066	-756.415	72.435	-1007.123	-820.875	-657.824	31.237
	1147.00	131.086	233.231	164.873	-750.444	78.406	-1017.960	-818.324	-650.910	29.643
			14.142		16.221					
LIQ	1147.00	104.600	247.373	164.873	-734.223	94.627	-1017.960	-802.103	-650.910	29.643
	1200.00	104.600	252.098	168.622	-728.679	100.171	-1031.196	-800.418	-643.962	28.031
	1300.00	104.600	260.470	175.370	-718.219	110.631	-1056.830	-797.245	-631.053	25.356
	1400.00	104.600	268.222	181.728	-707.759	121.091	-1083.270	-794.081	-618.388	23.072
	1500.00	104.600	275.438	187.738	-697.299	131.551	-1110.457	-790.924	-605.948	21.101
	1600.00	104.600	282.189	193.432	-686.839	142.011	-1138.342	-787.775	-593.719	19.383
	1700.00	104.600	288.530	198.842	-676.379	152.471	-1166.881	-921.569	-582.982	17.913
	1800.00	104.600	294.509	203.992	-665.919	162.931	-1196.036	-917.005	-563.197	16.344
	1900.00	104.600	300.165	208.906	-655.459	173.391	-1225.772	-912.450	-543.665	14.946
	2000.00	104.600	305.530	213.605	-644.999	183.851	-1256.059	-907.907	-524.373	13.695
	2100.00	104.600	310.633	218.105	-634.539	194.311	-1286.869	-903.376	-505.308	12.569
	2200.00	104.600	315.499	222.422	-624.079	204.771	-1318.178	-898.858	-486.458	11.550
	2300.00	104.600	320.149	226.571	-613.619	215.231	-1349.962	-894.354	-467.813	10.624
	2329.00	104.600	321.460	227.744	-610.586	218.264	-1359.266	-893.050	-462.443	10.372

References

Phase	H / S	C _p	Remarks
SOL	Nb1,Ja1	Ja1	Ku1
LIQ	Ja1	Ja1	BPT= 2329., L= 248.15 kJ

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	55.773	316.336	316.336	–473.210	0.000	–567.526	–473.210	–484.399	84.865
	300.00	55.800	316.681	316.337	–473.107	0.103	–568.111	–473.219	–484.469	84.354
	400.00	56.800	332.890	318.540	–467.470	5.740	–600.626	–473.806	–488.136	63.744
	500.00	57.286	345.623	322.729	–461.763	11.447	–634.575	–474.596	–491.631	51.360
	600.00	57.558	356.093	327.443	–456.020	17.190	–669.676	–475.592	–494.948	43.089
	700.00	57.725	364.979	332.187	–450.255	22.955	–705.741	–476.812	–498.081	37.167
	800.00	57.834	372.695	336.779	–444.477	28.733	–742.633	–478.288	–501.022	32.713
	900.00	57.910	379.512	341.155	–438.689	34.521	–780.250	–480.818	–503.681	29.233
	1000.00	57.965	385.616	345.302	–432.895	40.315	–818.512	–482.531	–506.129	26.437
	1100.00	58.006	391.143	349.222	–427.097	46.113	–857.354	–491.557	–508.055	24.126
	1200.00	58.037	396.191	352.928	–421.295	51.915	–896.724	–493.033	–509.490	22.178
	1300.00	58.061	400.838	356.437	–415.490	57.720	–936.579	–494.516	–510.801	20.524
	1400.00	58.080	405.141	359.764	–409.683	63.527	–976.880	–496.004	–511.998	19.103
	1500.00	58.095	409.149	362.925	–403.874	69.336	–1017.597	–497.499	–513.088	17.867
	1600.00	58.108	412.899	365.932	–398.064	75.146	–1058.701	–498.999	–514.079	16.783
	1700.00	58.119	416.422	368.800	–392.252	80.958	–1100.169	–637.443	–516.270	15.863
	1800.00	58.127	419.744	371.538	–386.440	86.770	–1141.979	–637.525	–509.140	14.775
	1900.00	58.135	422.887	374.159	–380.627	92.583	–1184.112	–637.618	–502.005	13.801
	2000.00	58.141	425.869	376.671	–374.813	98.397	–1226.551	–637.721	–494.865	12.925
	2100.00	58.146	428.706	379.081	–368.999	104.211	–1269.281	–637.835	–487.719	12.131
	2200.00	58.151	431.411	381.399	–363.184	110.026	–1312.288	–637.962	–480.568	11.410
	2300.00	58.155	433.996	383.630	–357.369	115.841	–1355.559	–638.103	–473.410	10.751
	2400.00	58.158	436.471	385.781	–351.553	121.657	–1399.083	–638.258	–466.247	10.148
	2500.00	58.162	438.845	387.856	–345.737	127.473	–1442.850	–638.428	–459.076	9.592
	2600.00	58.164	441.126	389.861	–339.921	133.289	–1486.849	–638.615	–451.898	9.079
	2700.00	58.167	443.322	391.801	–334.104	139.106	–1531.072	–638.820	–444.713	8.603
	2800.00	58.169	445.437	393.679	–328.287	144.923	–1575.511	–639.043	–437.520	8.162
	2900.00	58.170	447.478	395.499	–322.470	150.740	–1620.157	–639.286	–430.318	7.751
	3000.00	58.172	449.450	397.265	–316.653	156.557	–1665.004	–639.549	–423.108	7.367

References

Phase	H / S	C _p
GAS	Ja1	Ja1

SrF2

STRONTIUM FLUORIDE

125.617

Phase	T [K]	C _p [	S J / (K mol)	-(G-H298)/T [	H [	H-H298 kJ / mol	G [	ΔH _f [	ΔG _f [	log K _f [-]
SOL-1	298.15	69.991	82.132	82.132	-1217.126	0.000	-1241.614	-1217.126	-1164.546	204.024
	300.00	70.097	82.565	82.133	-1216.996	0.130	-1241.766	-1217.104	-1164.220	202.709
	400.00	74.727	103.422	84.945	-1209.735	7.391	-1251.104	-1215.813	-1146.783	149.755
	500.00	77.320	120.404	90.392	-1202.120	15.006	-1262.322	-1214.487	-1129.680	118.017
	600.00	78.826	134.645	96.613	-1194.307	22.819	-1275.094	-1213.251	-1112.837	96.881
	700.00	79.915	146.880	102.941	-1186.369	30.757	-1289.184	-1212.171	-1096.189	81.799
	800.00	80.960	157.618	109.118	-1178.325	38.801	-1304.420	-1211.282	-1079.683	70.496
	900.00	82.332	167.188	115.047	-1170.199	46.927	-1320.668	-1211.396	-1063.195	61.706
	1000.00	85.799	176.036	120.708	-1161.798	55.328	-1337.834	-1210.440	-1046.776	54.678
	1100.00	90.175	184.407	126.121	-1153.012	64.114	-1355.860	-1216.432	-1030.119	48.916
	1200.00	97.089	192.523	131.318	-1143.679	73.447	-1374.707	-1214.341	-1013.269	44.106
	1300.00	108.780	200.717	136.339	-1133.435	83.691	-1394.367	-1211.358	-996.626	40.045
	1400.00	143.930	209.387	141.236	-1121.714	95.412	-1414.856	-1206.915	-980.252	36.574
	1421.00	165.268	211.682	142.259	-1118.476	98.650	-1419.277	-1205.207	-976.865	35.909
			0.000		0.000					
SOL-2	1421.00	165.268	211.682	142.259	-1118.476	98.650	-1419.277	-1205.207	-976.865	35.909
	1484.00	165.268	218.851	145.360	-1108.064	109.062	-1432.840	-1199.389	-966.868	34.032
			0.000		0.000					
SOL-3	1484.00	165.268	218.851	145.360	-1108.064	109.062	-1432.840	-1199.389	-966.868	34.032
	1500.00	154.808	220.568	146.153	-1105.504	111.622	-1436.355	-1197.996	-964.369	33.582
	1600.00	125.938	229.637	151.100	-1091.467	125.659	-1458.886	-1191.263	-949.029	30.983
	1700.00	113.805	236.908	155.940	-1079.479	137.647	-1482.223	-1323.529	-935.334	28.739
	1750.00	107.738	240.120	158.299	-1073.941	143.185	-1494.150	-1320.938	-923.955	27.579
			16.956		29.673					
LIQ	1750.00	99.048	257.076	158.299	-1044.268	172.858	-1494.150	-1291.265	-923.955	27.579
	1800.00	99.048	259.866	161.082	-1039.315	177.811	-1507.074	-1289.263	-913.489	26.509
	1900.00	99.048	265.221	166.424	-1029.411	187.715	-1533.331	-1285.269	-892.721	24.543
	2000.00	99.048	270.302	171.491	-1019.506	197.620	-1560.109	-1281.289	-872.164	22.779
	2100.00	99.048	275.134	176.313	-1009.601	207.525	-1587.383	-1277.322	-851.805	21.187
	2200.00	99.048	279.742	180.910	-999.696	217.430	-1615.128	-1273.370	-831.635	19.746
	2300.00	99.048	284.145	185.304	-989.791	227.335	-1643.324	-1269.431	-811.645	18.433
	2400.00	99.048	288.360	189.510	-979.887	237.239	-1671.951	-1265.508	-791.825	17.234
	2500.00	99.048	292.403	193.546	-969.982	247.144	-1700.991	-1261.600	-772.169	16.134
	2600.00	99.048	296.288	197.423	-960.077	257.049	-1730.426	-1257.707	-752.668	15.121
	2700.00	99.048	300.026	201.155	-950.172	266.954	-1760.243	-1253.831	-733.317	14.187
	2759.00	99.048	302.167	203.292	-944.329	272.797	-1778.008	-1251.551	-721.968	13.669

References

Phase	H / S	C _p	Remarks
SOL-1	Ja1,Nb1	Ja1	
SOL-2	Ja1	Ja1	
SOL-3	Ja1	Ja1	
LIQ	Ja1	Ja1	

BPT= 2759., L= 319.7 kJ

89.636

STRONTIUM HYDRIDE

SrH2

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
SOL	298.15	40.208	49.790	49.790	-180.330	0.000	-195.175	-180.330	-139.609	24.459
	300.00	40.250	50.038	49.790	-180.256	0.074	-195.267	-180.358	-139.356	24.264
	400.00	42.509	61.927	51.396	-176.118	4.212	-200.888	-181.883	-125.458	16.383
	500.00	44.769	71.656	54.503	-171.754	8.576	-207.581	-183.367	-111.179	11.615
	600.00	47.028	80.018	58.074	-167.164	13.166	-215.174	-184.811	-96.605	8.410
	700.00	49.288	87.437	61.748	-162.348	17.982	-223.554	-186.241	-81.791	6.103
	800.00	51.547	94.166	65.386	-157.306	23.024	-232.639	-187.701	-66.770	4.360
	900.00	53.806	100.367	68.933	-152.039	28.291	-242.369	-189.999	-51.483	2.988
	1000.00	56.066	106.153	72.368	-146.545	33.785	-252.698	-191.275	-36.022	1.882

References

Phase	H / S	C _p
SOL	Nb1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	77.963	159.118	159.118	-561.493	0.000	-608.934	-561.493	-557.702	97.707
	300.00	78.013	159.600	159.119	-561.349	0.144	-609.229	-561.499	-557.679	97.100
	400.00	80.762	182.419	162.212	-553.410	8.083	-626.378	-577.955	-555.788	72.579
	500.00	83.510	200.736	168.143	-545.196	16.297	-645.564	-620.861	-546.125	57.053
	600.00	86.258	216.205	174.896	-536.708	24.785	-666.431	-619.228	-531.329	46.256
	700.00	89.006	229.708	181.782	-527.945	33.548	-688.740	-617.536	-516.813	38.565
	800.00	91.754	241.772	188.540	-518.907	42.586	-712.325	-615.819	-502.541	32.813
	811.00	92.056	243.028	189.270	-517.896	43.597	-714.991	-615.630	-500.985	32.267
LIQ			24.248		19.665					
	811.00	110.039	267.275	189.270	-498.231	63.262	-714.991	-595.965	-500.985	32.267
	900.00	110.039	278.733	197.560	-488.437	73.056	-739.297	-593.721	-490.643	28.476
	1000.00	110.039	290.327	206.268	-477.433	84.060	-767.761	-590.271	-479.375	25.040
	1100.00	110.039	300.815	214.394	-466.429	95.064	-797.326	-594.132	-468.101	22.228
	1200.00	110.039	310.390	222.000	-455.425	106.068	-827.893	-590.444	-456.807	19.884
	1300.00	110.039	319.198	229.143	-444.422	117.071	-859.378	-586.763	-445.820	17.913
	1400.00	110.039	327.352	235.870	-433.418	128.075	-891.711	-583.087	-435.116	16.234
	1500.00	110.039	334.944	242.225	-422.414	139.079	-924.830	-579.418	-424.674	14.788
	1600.00	110.039	342.046	248.244	-411.410	150.083	-958.683	-575.755	-414.478	13.531
	1700.00	110.039	348.717	253.960	-400.406	161.087	-993.225	-570.034	-405.805	12.469
	1800.00	110.039	355.007	259.401	-389.402	172.091	-1028.414	-570.953	-388.114	11.263
	1900.00	110.039	360.956	264.591	-378.398	183.095	-1064.215	-698.881	-370.706	10.191
	2000.00	110.039	366.601	269.551	-367.394	194.099	-1100.595	-693.819	-353.565	9.234
	2100.00	110.039	371.969	274.301	-356.390	205.103	-1137.526	-688.767	-336.676	8.374
	2178.00	110.039	375.982	277.871	-347.807	213.686	-1166.697	-684.835	-323.671	7.763

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja2 BPT= 2178., L= 189.74 kJ

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
GAS	298.15	61.396	339.557	339.557	-274.889	0.000	-376.128	-274.889	-324.896	56.920
	300.00	61.408	339.937	339.559	-274.775	0.114	-376.757	-274.926	-325.207	56.623
	400.00	61.815	357.667	341.973	-268.611	6.278	-411.678	-293.157	-341.089	44.542
	500.00	62.007	371.484	346.544	-262.419	12.470	-448.161	-338.084	-348.721	36.431
	600.00	62.113	382.799	351.672	-256.213	18.676	-485.892	-338.733	-350.791	30.539
	700.00	62.177	392.379	356.821	-249.998	24.891	-524.663	-339.589	-352.736	26.321
	800.00	62.219	400.684	361.796	-243.778	31.111	-564.326	-340.690	-354.542	23.149
	900.00	62.248	408.015	366.532	-237.555	37.334	-604.768	-342.839	-356.114	20.668
	1000.00	62.268	414.574	371.014	-231.329	43.560	-645.903	-344.166	-357.517	18.675
	1100.00	62.284	420.510	375.248	-225.101	49.788	-687.662	-352.804	-358.437	17.021
	1200.00	62.295	425.930	379.249	-218.872	56.017	-729.988	-353.891	-358.901	15.623
	1300.00	62.304	430.916	383.034	-212.642	62.247	-772.833	-354.983	-359.275	14.436
	1400.00	62.312	435.534	386.621	-206.411	68.478	-816.159	-356.081	-359.564	13.415
	1500.00	62.317	439.833	390.027	-200.180	74.709	-859.930	-357.184	-359.774	12.528
	1600.00	62.322	443.855	393.267	-193.948	80.941	-904.116	-358.293	-359.910	11.750
	1700.00	62.326	447.633	396.355	-187.716	87.173	-948.692	-496.344	-361.272	11.101
	1800.00	62.329	451.196	399.304	-181.483	93.406	-993.636	-496.034	-353.336	10.254
	1900.00	62.332	454.566	402.124	-175.250	99.639	-1038.925	-495.733	-345.416	9.496
	2000.00	62.335	457.763	404.827	-169.016	105.873	-1084.543	-495.441	-337.513	8.815
	2100.00	62.337	460.805	407.421	-162.783	112.106	-1130.473	-495.160	-329.623	8.199
	2200.00	62.338	463.705	409.914	-156.549	118.340	-1176.699	-494.889	-321.747	7.639
	2300.00	62.340	466.476	412.313	-150.315	124.574	-1223.209	-494.630	-313.882	7.128
	2400.00	62.341	469.129	414.626	-144.081	130.808	-1269.991	-494.383	-306.029	6.661
	2500.00	62.342	471.674	416.857	-137.847	137.042	-1317.032	-494.149	-298.186	6.230
	2600.00	62.343	474.119	419.013	-131.613	143.276	-1364.322	-493.928	-290.352	5.833
	2700.00	62.344	476.472	421.098	-125.378	149.511	-1411.852	-493.721	-282.526	5.466
	2800.00	62.345	478.739	423.116	-119.144	155.745	-1459.614	-493.529	-274.708	5.125
	2900.00	62.346	480.927	425.072	-112.909	161.980	-1507.598	-493.353	-266.896	4.807
	3000.00	62.347	483.041	426.969	-106.675	168.214	-1555.797	-493.192	-259.090	4.511

References

Phase	H / S	C _p
GAS	Ja1	Ja1

SrMoO4

STRONTIUM MOLYBDATE

247.558

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
SOL	298.15	117.075	128.867	128.867	-1548.001	0.000	-1586.423	-1548.001	-1438.964	252.101
	300.00	117.447	129.593	128.869	-1547.784	0.217	-1586.662	-1547.987	-1438.288	250.428
	400.00	131.542	165.540	133.675	-1535.255	12.746	-1601.471	-1546.610	-1401.902	183.070
	500.00	139.644	195.827	143.159	-1521.667	26.334	-1619.581	-1544.615	-1365.949	142.700
	600.00	145.386	221.818	154.154	-1507.403	40.598	-1640.494	-1542.392	-1330.422	115.824
	700.00	150.015	244.587	165.480	-1492.626	55.375	-1663.837	-1540.105	-1295.275	96.655
	800.00	154.050	264.887	176.660	-1477.419	70.582	-1689.329	-1537.841	-1260.454	82.299
	900.00	157.740	283.247	187.499	-1461.828	86.173	-1716.750	-1536.418	-1225.833	71.146
	1000.00	161.215	300.048	197.926	-1445.878	102.123	-1745.927	-1533.972	-1191.453	62.235

References

Phase	H / S	C _p
SOL	K7	K7

Sr3N2

TRISTRONTIUM DINITRIDE

290.873

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
SOL	298.15	129.654	123.428	123.428	-391.204	0.000	-428.004	-391.204	-321.064	56.249
	300.00	129.704	124.230	123.430	-390.964	0.240	-428.233	-391.166	-320.629	55.826
	400.00	132.424	161.916	128.550	-377.858	13.346	-442.624	-389.247	-297.412	38.838
	500.00	135.143	191.758	138.309	-364.479	26.725	-460.358	-387.586	-274.651	28.693
	600.00	137.863	216.638	149.346	-350.829	40.375	-480.812	-386.231	-252.198	21.956
	700.00	140.582	238.094	160.526	-336.907	54.297	-503.572	-385.276	-229.940	17.158
	800.00	143.302	257.043	171.429	-322.713	68.491	-528.347	-384.838	-207.786	13.567
	900.00	146.022	274.079	181.904	-308.246	82.958	-554.917	-387.323	-185.411	10.761
	1000.00	148.741	289.604	191.909	-293.508	97.696	-583.113	-387.121	-162.985	8.513
	1100.00	151.461	303.909	201.449	-278.498	112.706	-612.798	-408.622	-139.537	6.626
	1200.00	154.180	317.204	210.547	-263.216	127.988	-643.861	-407.232	-115.135	5.012
	1300.00	156.900	329.652	219.236	-247.662	143.542	-676.210	-405.616	-90.857	3.651

References

Phase	H / S	C _p
SOL	Nb1/Ku1	e

103.619 STRONTIUM OXIDE SrO										
Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _i [— —]
SOL	298.15	45.411	55.522	55.522	-592.036	0.000	-608.590	-592.036	-561.404	98.356
	300.00	45.478	55.803	55.523	-591.952	0.084	-608.693	-592.029	-561.213	97.716
	400.00	48.481	69.326	57.346	-587.244	4.792	-614.974	-591.563	-551.009	71.954
	500.00	50.533	80.378	60.881	-582.287	9.749	-622.476	-591.061	-540.929	56.510
	600.00	52.049	89.731	64.929	-577.155	14.881	-630.994	-590.613	-530.946	46.223
	700.00	53.263	97.849	69.065	-571.888	20.148	-640.382	-590.281	-521.030	38.880
	800.00	54.298	105.030	73.120	-566.508	25.528	-650.532	-590.119	-511.151	33.375
	900.00	55.222	111.480	77.030	-561.032	31.004	-661.363	-590.937	-501.199	29.089
	1000.00	56.073	117.342	80.773	-555.466	36.570	-672.809	-590.868	-491.231	25.659
	1100.00	56.874	122.725	84.345	-549.819	42.217	-684.816	-598.046	-480.923	22.837
	1200.00	57.640	127.706	87.754	-544.093	47.943	-697.340	-597.609	-470.294	20.471
	1300.00	58.381	132.349	91.007	-538.292	53.744	-710.346	-597.114	-459.704	18.471
	1400.00	59.103	136.702	94.118	-532.417	59.619	-723.801	-596.561	-449.154	16.758
	1500.00	59.812	140.804	97.095	-526.471	65.565	-737.678	-595.950	-438.646	15.275
	1600.00	60.509	144.687	99.949	-520.455	71.581	-751.954	-595.282	-428.181	13.979
	1700.00	61.198	148.376	102.690	-514.370	77.666	-766.609	-731.494	-419.054	12.876
	1800.00	61.880	151.893	105.326	-508.216	83.820	-781.624	-729.283	-400.738	11.629
	1900.00	62.557	155.257	107.866	-501.994	90.042	-796.982	-727.019	-382.547	10.517
	2000.00	63.230	158.483	110.317	-495.705	96.331	-812.670	-724.703	-364.477	9.519
	2100.00	63.899	161.584	112.685	-489.348	102.688	-828.675	-722.336	-346.524	8.619
	2200.00	64.565	164.572	114.976	-482.925	109.111	-844.983	-719.918	-328.684	7.804
	2300.00	65.228	167.457	117.195	-476.435	115.601	-861.586	-717.451	-310.956	7.062
	2400.00	65.889	170.247	119.348	-469.879	122.157	-878.472	-714.936	-293.336	6.384
	2500.00	66.549	172.950	121.438	-463.258	128.778	-895.632	-712.372	-275.822	5.763
	2600.00	67.207	175.573	123.470	-456.570	135.466	-913.059	-709.761	-258.411	5.192
	2700.00	67.864	178.121	125.447	-449.816	142.220	-930.744	-707.103	-241.102	4.664
	2800.00	68.520	180.601	127.373	-442.997	149.039	-948.681	-704.400	-223.892	4.177
	2900.00	69.174	183.017	129.250	-436.112	155.924	-966.862	-701.650	-206.779	3.724
	2938.00	69.423	183.919	129.952	-433.479	158.557	-973.834	-700.593	-200.302	3.561
LIQ			25.634		75.312					
	2938.00	66.944	209.553	129.952	-358.167	233.869	-973.834	-625.281	-200.302	3.561
	3000.00	66.944	210.951	131.611	-354.016	238.020	-986.870	-623.709	-191.350	3.332
	3100.00	66.944	213.146	134.206	-347.322	244.714	-1008.075	-621.190	-176.980	2.982
	3200.00	66.944	215.272	136.706	-340.628	251.408	-1029.497	-618.692	-162.690	2.656
	3300.00	66.944	217.332	139.119	-333.933	258.103	-1051.127	-616.215	-148.479	2.350
	3400.00	66.944	219.330	141.449	-327.239	264.797	-1072.961	-613.759	-134.342	2.064
	3500.00	66.944	221.271	143.702	-320.544	271.492	-1094.992	-611.325	-120.277	1.795

References

Phase	H / S	C _p	Remarks
SOL	Nb1,Ja1	Ja1	Ja1 MPT= 2938.
LIQ	Ja1	Ja1	

SrO2

STRONTIUM PEROXIDE

119.619

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	69.036	58.994	58.994	-633.458	0.000	-651.047	-633.458	-573.279	100.436
	300.00	69.134	59.422	58.996	-633.330	0.128	-651.157	-633.434	-572.905	99.752
	400.00	74.429	80.036	61.771	-626.152	7.306	-658.166	-631.983	-552.940	72.207
	500.00	79.724	97.213	67.186	-618.444	15.014	-667.051	-630.261	-533.373	55.721
	600.00	85.019	112.216	73.465	-610.207	23.251	-677.537	-628.287	-514.177	44.763

References

Phase	H / S	C _p
SOL	Nb1/e	e

SrAl2O4

STRONTIUM DIALUMINIUM TETRAOXIDE

205.581

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL-A	298.15	119.030	106.692	106.692	-2324.601	0.000	-2356.411	-2324.601	-2200.618	385.539
	300.00	119.772	107.431	106.694	-2324.380	0.221	-2356.609	-2324.628	-2199.848	383.028
	400.00	146.035	146.015	111.776	-2310.906	13.695	-2369.312	-2324.866	-2158.164	281.827
	500.00	158.456	180.084	122.112	-2295.615	28.986	-2385.657	-2323.901	-2116.587	221.118
	600.00	165.429	209.644	134.294	-2279.391	45.210	-2405.178	-2322.610	-2075.244	180.666
	700.00	169.830	235.499	146.945	-2262.613	61.988	-2427.462	-2321.383	-2034.116	151.788
	800.00	172.859	258.385	159.472	-2245.470	79.131	-2452.179	-2320.467	-1993.146	130.139
	900.00	175.091	278.880	171.621	-2228.068	96.533	-2479.060	-2320.844	-1952.181	113.302
	923.00	175.527	283.304	174.349	-2224.035	100.566	-2485.525	-2320.796	-1942.760	109.945
			2.086		1.925					
SOL-B	923.00	173.138	285.390	174.349	-2222.110	102.491	-2485.525	-2318.871	-1942.760	109.945
	1000.00	175.393	299.352	183.443	-2208.692	115.909	-2508.044	-2340.047	-1909.864	99.761
	1100.00	178.322	316.206	194.756	-2191.006	133.595	-2538.833	-2346.801	-1866.520	88.634
	1200.00	181.251	331.847	205.536	-2173.028	151.573	-2571.244	-2345.784	-1822.901	79.349
	1300.00	184.180	346.471	215.821	-2154.756	169.845	-2605.168	-2344.543	-1779.376	71.496
	1400.00	187.108	360.227	225.649	-2136.192	188.409	-2640.510	-2343.069	-1735.955	64.769
	1500.00	190.037	373.236	235.058	-2117.334	207.267	-2677.189	-2341.359	-1692.648	58.943
	1600.00	192.966	385.594	244.084	-2098.184	226.417	-2715.135	-2339.407	-1649.463	53.849

References

Phase	H / S	C _p
SOL-A	Nb1/e	Ku1
SOL-B	Ku1	Ku1

104.627

STRONTIUM MONOHYDROXIDE (GAS)

SrOH[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	45.960	246.505	246.505	-205.518	0.000	-279.014	-205.518	-212.346	37.202
	300.00	46.041	246.790	246.506	-205.433	0.085	-279.470	-205.536	-212.388	36.980
	400.00	49.094	260.505	248.355	-200.658	4.860	-304.860	-206.456	-214.531	28.015
	500.00	50.739	271.653	251.935	-195.659	9.859	-331.486	-207.374	-216.445	22.612
	600.00	51.786	281.002	256.022	-190.530	14.988	-359.131	-208.393	-218.166	18.993
	700.00	52.535	289.044	260.178	-185.312	20.206	-387.643	-209.580	-219.704	16.394
	800.00	53.178	296.101	264.236	-180.026	25.492	-416.907	-210.988	-221.057	14.434
	900.00	53.789	302.400	268.133	-174.677	30.841	-446.838	-213.421	-222.138	12.893
	1000.00	54.373	308.098	271.849	-169.269	36.249	-477.367	-215.011	-223.022	11.649
	1100.00	54.934	313.307	275.385	-163.804	41.714	-508.441	-223.890	-223.396	10.608
	1200.00	55.473	318.110	278.747	-158.283	47.235	-540.015	-225.198	-223.293	9.720
	1300.00	55.992	322.571	281.949	-152.710	52.808	-572.052	-226.491	-223.081	8.964
	1400.00	56.483	326.738	285.001	-147.086	58.432	-604.519	-227.770	-222.771	8.312
	1500.00	56.929	330.651	287.915	-141.415	64.103	-637.391	-229.039	-222.370	7.744
	1600.00	57.332	334.338	290.702	-135.701	69.817	-670.642	-230.299	-221.884	7.244
	1700.00	57.702	337.825	293.373	-129.950	75.568	-704.252	-368.491	-222.614	6.840
	1800.00	58.046	341.133	295.935	-124.162	81.356	-738.201	-368.313	-214.038	6.211
	1900.00	58.369	344.280	298.397	-118.341	87.177	-772.473	-368.137	-205.472	5.649
	2000.00	58.676	347.282	300.767	-112.489	93.029	-807.052	-367.962	-196.916	5.143
	2100.00	58.970	350.152	303.051	-106.606	98.912	-841.925	-367.792	-188.368	4.685
	2200.00	59.253	352.902	305.255	-100.695	104.823	-877.078	-367.626	-179.827	4.270
	2300.00	59.526	355.542	307.384	-94.756	110.762	-912.501	-367.465	-171.295	3.890
	2400.00	59.792	358.081	309.444	-88.790	116.728	-948.183	-367.310	-162.769	3.543
	2500.00	60.051	360.527	311.439	-82.798	122.720	-984.115	-367.161	-154.250	3.223
	2600.00	60.305	362.887	313.372	-76.780	128.738	-1020.286	-367.019	-145.736	2.928
	2700.00	60.554	365.168	315.249	-70.737	134.781	-1056.689	-366.884	-137.228	2.655
	2800.00	60.800	367.374	317.071	-64.669	140.849	-1093.317	-366.756	-128.724	2.401
	2900.00	61.041	369.512	318.843	-58.577	146.941	-1130.162	-366.636	-120.225	2.165
	3000.00	61.280	371.585	320.566	-52.461	153.057	-1167.217	-366.524	-111.730	1.945

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S — (G-H298)/T —	H [————— kJ / mol —————]	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]	
SOL	298.15	74.899	97.069	97.069	-968.889	0.000	-997.830	-968.889	-881.099	154.365
	300.00	75.145	97.533	97.070	-968.750	0.139	-998.010	-968.907	-880.554	153.318
	400.00	88.440	120.971	100.176	-960.571	8.318	-1008.960	-969.362	-851.006	111.130
	500.00	101.737	142.135	106.481	-951.062	17.827	-1022.129	-968.760	-821.465	85.818
	600.00	115.035	161.859	114.083	-940.224	28.665	-1037.339	-967.114	-792.143	68.962
	700.00	128.334	180.590	122.256	-928.055	40.834	-1054.468	-964.447	-763.178	56.949
	783.15	139.392	195.604	129.251	-916.924	51.965	-1070.112	-961.472	-739.434	49.319
LIQ			26.840		21.020					
	783.15	157.737	222.444	129.251	-895.904	72.985	-1070.112	-940.452	-739.434	49.319
	800.00	157.737	225.802	131.249	-893.247	75.642	-1073.888	-939.477	-735.119	47.998
	900.00	157.737	244.381	142.807	-877.473	91.416	-1097.416	-934.675	-709.833	41.198
	1000.00	157.737	261.000	153.810	-861.699	107.190	-1122.699	-929.132	-685.148	35.788
	1100.00	157.737	276.034	164.249	-845.926	122.963	-1149.563	-930.978	-660.664	31.372
	1200.00	157.737	289.759	174.145	-830.152	138.737	-1177.863	-925.346	-636.339	27.699
	1300.00	157.737	302.385	183.530	-814.378	154.511	-1207.478	-919.790	-612.481	24.610
	1400.00	157.737	314.074	192.442	-798.605	170.284	-1238.308	-914.309	-589.048	21.978
	1500.00	157.737	324.957	200.918	-782.831	186.058	-1270.266	-908.899	-566.004	19.710

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 NDPT= 1017.

Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
GAS	298.15	76.205	305.123	305.123	–595.802	0.000	–686.774	–595.802	–570.044	99.869
	300.00	76.359	305.595	305.124	–595.661	0.141	–687.339	–595.818	–569.884	99.226
	400.00	82.201	328.461	308.202	–587.698	8.104	–719.083	–596.489	–561.129	73.276
	500.00	85.307	347.169	314.183	–579.309	16.493	–752.894	–597.007	–552.229	57.691
	600.00	87.264	362.906	321.027	–570.674	25.128	–788.418	–597.565	–543.222	47.292
	700.00	88.710	376.471	328.001	–561.873	33.929	–825.403	–598.265	–534.112	39.856
	800.00	89.936	388.398	334.820	–552.940	42.862	–863.658	–599.170	–524.889	34.272
	900.00	91.090	399.058	341.376	–543.888	51.914	–903.040	–601.090	–515.457	29.916
	1000.00	92.253	408.715	347.634	–534.721	61.081	–943.436	–602.154	–505.885	26.425
	1100.00	93.332	417.558	353.594	–525.442	70.360	–984.756	–610.494	–495.857	23.546
	1200.00	94.410	425.725	359.269	–516.055	79.747	–1026.925	–611.249	–485.402	21.129
	1300.00	95.436	433.323	364.677	–506.562	89.240	–1069.882	–611.974	–474.885	19.081
	1400.00	96.391	440.431	369.837	–496.970	98.832	–1113.574	–612.674	–464.313	17.324
	1500.00	97.271	447.112	374.768	–487.286	108.516	–1157.954	–613.354	–453.692	15.799
	1600.00	98.077	453.416	379.488	–477.518	118.284	–1202.983	–614.019	–443.026	14.463
	1700.00	98.815	459.384	384.014	–467.673	128.129	–1248.626	–751.611	–433.614	13.323
	1800.00	99.490	465.051	388.360	–457.757	138.045	–1294.850	–750.830	–414.931	12.041
	1900.00	100.108	470.447	392.540	–447.777	148.025	–1341.627	–750.050	–396.291	10.895
	2000.00	100.673	475.597	396.565	–437.738	158.064	–1388.931	–749.275	–377.692	9.864
	2100.00	101.191	480.521	400.446	–427.644	168.158	–1436.739	–748.508	–359.132	8.933
	2200.00	101.665	485.240	404.194	–417.501	178.301	–1485.029	–747.754	–340.608	8.087
	2300.00	102.099	489.769	407.817	–407.312	188.490	–1533.781	–747.015	–322.118	7.316
	2400.00	102.496	494.123	411.323	–397.082	198.720	–1582.977	–746.293	–303.659	6.609
	2500.00	102.858	498.314	414.719	–386.814	208.988	–1632.600	–745.591	–285.231	5.960
	2600.00	103.188	502.355	418.013	–376.512	219.290	–1682.635	–744.911	–266.830	5.361
	2700.00	103.487	506.255	421.209	–366.178	229.624	–1733.066	–744.255	–248.455	4.807
	2800.00	103.757	510.023	424.314	–355.815	239.987	–1783.881	–743.627	–230.103	4.293
	2900.00	104.000	513.669	427.333	–345.427	250.375	–1835.067	–743.026	–211.774	3.814
	3000.00	104.217	517.198	430.270	–335.016	260.786	–1886.611	–742.456	–193.465	3.369

References

Phase	H / S	C _p
GAS	Ja1	Ja1

SrSiO3

STRONTIUM METASILICATE

163.704

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
SOL	298.15	88.531	96.701	96.701	-1633.898	0.000	-1662.729	-1633.898	-1548.767	271.338
	300.00	88.957	97.250	96.702	-1633.734	0.164	-1662.909	-1633.902	-1548.239	269.572
	400.00	104.303	125.236	100.414	-1623.969	9.929	-1674.064	-1633.473	-1519.721	198.455
	500.00	112.001	149.419	107.858	-1613.117	20.781	-1687.827	-1632.414	-1491.399	155.805
	600.00	116.690	170.284	116.564	-1601.666	32.232	-1703.837	-1631.183	-1463.310	127.392
	700.00	119.957	188.530	125.569	-1589.826	44.072	-1721.797	-1629.982	-1435.428	107.113
	800.00	122.467	204.718	134.470	-1577.700	56.198	-1741.474	-1628.919	-1407.709	91.914
	900.00	124.536	219.265	143.097	-1565.347	68.551	-1762.686	-1628.826	-1380.032	80.095
	1000.00	126.332	232.481	151.385	-1552.802	81.096	-1785.283	-1627.849	-1352.440	70.644
	1100.00	127.949	244.599	159.316	-1540.087	93.811	-1809.145	-1634.124	-1324.598	62.900
	1200.00	129.444	255.797	166.895	-1527.216	106.682	-1834.172	-1632.791	-1296.517	56.436
	1300.00	130.854	266.214	174.139	-1514.201	119.697	-1860.279	-1631.406	-1268.550	50.971

References

Phase	H / S	C _p	Remarks
SOL	Nb1,S5	S5	S5 MPT= 1853.

Sr2SiO4

STRONTIUM ORTHOSILICATE

267.323

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
SOL	298.15	143.258	153.101	153.101	-2304.497	0.000	-2350.144	-2304.497	-2188.996	383.503
	300.00	143.721	153.988	153.104	-2304.232	0.265	-2350.428	-2304.476	-2188.279	381.013
	400.00	161.097	198.008	158.987	-2288.889	15.608	-2368.092	-2302.711	-2149.784	280.733
	500.00	170.824	235.082	170.601	-2272.256	32.241	-2389.797	-2300.327	-2111.822	220.621
	600.00	177.542	266.850	184.058	-2254.822	49.675	-2414.932	-2297.796	-2074.358	180.589
	700.00	182.838	294.629	197.911	-2236.794	67.703	-2443.035	-2295.344	-2037.315	152.026
	800.00	187.377	319.346	211.574	-2218.279	86.218	-2473.756	-2293.108	-2000.609	130.626
	900.00	191.476	341.656	224.808	-2199.333	105.164	-2506.824	-2292.718	-1964.006	113.988
	1000.00	195.301	362.030	237.526	-2179.993	124.504	-2542.023	-2290.442	-1927.603	100.688
	1100.00	198.947	380.816	249.709	-2160.279	144.218	-2579.177	-2302.544	-1890.737	89.784
	1200.00	202.472	398.279	261.371	-2140.207	164.290	-2618.142	-2299.298	-1853.441	80.678

References

Phase	H / S	C _p
SOL	Nb1	S5

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	98.371	108.801	108.801	-1672.391	0.000	-1704.830	-1672.391	-1587.308	278.090
	300.00	98.738	109.410	108.803	-1672.209	0.182	-1705.032	-1672.386	-1586.780	276.283
	400.00	111.845	139.869	112.866	-1661.590	10.801	-1717.538	-1671.569	-1558.344	203.499
	500.00	118.226	165.583	120.910	-1650.054	22.337	-1732.846	-1670.249	-1530.186	159.857
	600.00	121.959	187.495	130.228	-1638.031	34.360	-1750.528	-1668.853	-1502.305	130.787
	700.00	124.443	206.493	139.796	-1625.703	46.688	-1770.248	-1667.589	-1474.650	110.040
	800.00	126.261	223.234	149.200	-1613.164	59.227	-1791.751	-1666.575	-1447.160	94.490
	900.00	127.691	238.191	158.272	-1600.464	71.927	-1814.836	-1666.655	-1419.698	82.397
	1000.00	128.881	251.708	166.950	-1587.634	84.757	-1839.341	-1665.977	-1392.295	72.726
	1100.00	129.914	264.041	175.224	-1574.693	97.698	-1865.138	-1672.677	-1364.606	64.800
	1200.00	130.840	275.385	183.105	-1561.654	110.737	-1892.117	-1675.888	-1336.516	58.177
	1300.00	131.690	285.892	190.612	-1548.527	123.864	-1920.187	-1674.636	-1308.286	52.568
	1400.00	132.486	295.681	197.771	-1535.318	137.073	-1949.271	-1673.411	-1280.151	47.763
	1500.00	133.241	304.847	204.607	-1522.032	150.359	-1979.302	-1672.218	-1252.103	43.602
	1600.00	133.966	313.470	211.145	-1508.671	163.720	-2010.222	-1671.067	-1224.133	39.964
	1700.00	134.666	321.612	217.405	-1495.239	177.152	-2041.980	-1806.902	-1197.528	36.796
	1800.00	135.348	329.329	223.411	-1481.738	190.653	-2074.531	-1804.428	-1161.754	33.713
	1900.00	136.015	336.665	229.180	-1468.170	204.221	-2107.833	-1802.019	-1126.116	30.959
	2000.00	136.671	343.658	234.731	-1454.536	217.855	-2141.852	-1813.813	-1090.158	28.472
	2100.00	137.316	350.342	240.078	-1440.836	231.555	-2176.555	-1811.444	-1054.034	26.218
	2200.00	137.954	356.745	245.236	-1427.073	245.318	-2211.911	-1809.051	-1018.023	24.171
	2300.00	138.585	362.891	250.219	-1413.246	259.145	-2247.895	-1806.634	-982.121	22.305
	2313.00	138.667	363.672	250.855	-1411.443	260.948	-2252.618	-1806.318	-977.461	22.074

References

Phase	H / S	C _p	Remarks
SOL	Nb1	Ku1,e	Tk1 MPT= 2313.

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL-1	298.15	143.677	159.000	159.000	-2287.401	0.000	-2334.807	-2287.401	-2170.099	380.192
	300.00	144.157	159.891	159.003	-2287.135	0.266	-2335.102	-2287.389	-2169.371	377.721
	400.00	161.405	204.058	164.908	-2271.741	15.660	-2353.364	-2286.039	-2130.205	278.176
	500.00	169.955	241.086	176.547	-2255.131	32.270	-2375.674	-2284.100	-2091.467	218.494
	600.00	175.081	272.559	189.993	-2237.861	49.540	-2401.397	-2282.141	-2053.127	178.741
	700.00	178.590	299.826	203.779	-2220.168	67.233	-2430.046	-2280.447	-2015.097	150.368
	800.00	181.238	323.854	217.316	-2202.171	85.230	-2461.254	-2279.193	-1977.281	129.103
	900.00	183.385	345.328	230.368	-2183.937	103.464	-2494.732	-2280.033	-1939.430	112.562
	1000.00	185.221	364.747	242.850	-2165.505	121.896	-2530.251	-2279.250	-1901.628	99.331
	1100.00	186.853	382.478	254.749	-2146.900	140.501	-2567.625	-2293.111	-1863.201	88.476
	1200.00	188.347	398.801	266.083	-2128.139	159.262	-2606.700	-2295.888	-1824.053	79.399
	1300.00	189.744	413.933	276.881	-2109.233	178.168	-2647.346	-2294.165	-1784.803	71.714
	1400.00	191.070	428.043	287.180	-2090.192	197.209	-2689.453	-2292.428	-1745.686	65.132
	1500.00	192.343	441.269	297.016	-2071.021	216.380	-2732.925	-2290.687	-1706.694	59.432
	1600.00	193.577	453.723	306.425	-2051.725	235.676	-2777.681	-2288.948	-1667.818	54.449
	1700.00	194.780	465.494	315.439	-2032.307	255.094	-2823.647	-2561.094	-1631.640	50.134
	1798.00	195.935	476.443	323.918	-2013.162	274.239	-2869.806	-2556.618	-1578.186	45.849
SOL-2			0.000		0.000					
	1798.00	195.811	476.443	323.918	-2013.162	274.239	-2869.806	-2556.618	-1578.186	45.849
	1800.00	195.811	476.661	324.088	-2012.770	274.631	-2870.760	-2556.527	-1577.098	45.766
	1900.00	195.811	487.248	332.399	-1993.189	294.212	-2918.960	-2552.063	-1522.808	41.865
	2000.00	195.811	497.292	340.395	-1973.608	313.793	-2968.191	-2561.883	-1468.304	38.348
	2100.00	195.811	506.845	348.096	-1954.027	333.374	-3018.402	-2557.622	-1413.730	35.165
	2133.00	195.811	509.898	350.575	-1947.565	339.836	-3035.178	-2556.228	-1395.765	34.181

References

Phase	H / S	C _p	Remarks
SOL-1	Nb1	Ku1,e	
SOL-2	u	e	Tk1 MPT= 2133.

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	343.293	376.560	376.560	-5648.818	0.000	-5761.089	-5648.818	-5361.338	939.284
	300.00	344.508	378.687	376.567	-5648.182	0.636	-5761.788	-5648.791	-5359.554	933.181
	400.00	387.969	484.598	390.711	-5611.263	37.555	-5805.103	-5645.520	-5263.557	687.350
	500.00	409.281	573.697	418.651	-5571.295	77.523	-5858.143	-5640.652	-5168.615	539.962
	600.00	421.874	649.517	450.970	-5529.690	119.128	-5919.400	-5635.616	-5074.685	441.791
	700.00	430.351	715.223	484.132	-5487.055	161.763	-5987.711	-5631.104	-4981.564	371.729
	800.00	436.635	773.116	516.709	-5443.692	205.126	-6062.185	-5627.535	-4889.029	319.221
	900.00	441.642	824.843	548.123	-5399.770	249.048	-6142.129	-5628.247	-4796.551	278.385
	1000.00	445.858	871.599	578.170	-5355.390	293.428	-6226.988	-5625.822	-4704.273	245.726
	1100.00	449.556	914.270	606.813	-5310.615	338.203	-6316.313	-5652.795	-4610.824	218.950
	1200.00	452.902	953.532	634.092	-5265.490	383.328	-6409.729	-5661.706	-4515.880	196.571
	1300.00	455.999	989.907	660.081	-5220.043	428.775	-6506.923	-5657.193	-4420.578	177.621
	1400.00	458.916	1023.808	684.864	-5174.296	474.522	-6607.628	-5652.718	-4325.622	161.391
	1500.00	461.700	1055.566	708.530	-5128.265	520.553	-6711.613	-5648.304	-4230.983	147.336
	1600.00	464.382	1085.449	731.163	-5081.960	566.858	-6818.679	-5643.975	-4136.637	135.047
	1700.00	466.987	1113.681	752.841	-5035.391	613.427	-6928.648	-6187.504	-4047.737	124.372
	1800.00	469.530	1140.445	773.638	-4988.564	660.254	-7041.366	-6177.701	-3922.152	113.818
	1900.00	472.024	1165.898	793.619	-4941.486	707.332	-7156.694	-6168.059	-3797.108	104.390
	2000.00	474.479	1190.173	812.844	-4894.161	754.657	-7274.506	-6200.990	-3671.232	95.883

References

Phase	H / S	C _p
SOL	K7	e

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
SOL	298.15	103.391	115.102	115.102	-1767.301	0.000	-1801.619	-1767.301	-1681.679	294.623
	300.00	103.713	115.742	115.104	-1767.109	0.192	-1801.832	-1767.287	-1681.148	292.714
	400.00	115.442	147.402	119.341	-1756.077	11.224	-1815.037	-1766.027	-1652.602	215.808
	500.00	121.527	173.876	127.676	-1744.201	23.100	-1831.139	-1764.290	-1624.442	169.704
	600.00	125.390	196.396	137.300	-1731.843	35.458	-1849.681	-1762.467	-1596.644	139.000
	700.00	128.205	215.946	147.169	-1719.157	48.144	-1870.320	-1760.737	-1569.146	117.091
	800.00	130.461	233.217	156.867	-1706.221	61.080	-1892.794	-1759.204	-1541.883	100.675
	900.00	132.391	248.697	166.225	-1693.076	74.225	-1916.903	-1758.707	-1514.717	87.912
	1000.00	134.120	262.737	175.185	-1679.749	87.552	-1942.486	-1757.394	-1487.677	77.708
	1100.00	135.717	275.595	183.737	-1666.256	101.045	-1969.411	-1763.408	-1460.418	69.349
	1200.00	137.224	287.470	191.893	-1652.609	114.692	-1997.572	-1765.600	-1432.719	62.365
	1300.00	138.667	298.511	199.674	-1638.814	128.487	-2026.878	-1763.563	-1405.061	56.456
	1400.00	140.065	308.838	207.107	-1624.877	142.424	-2057.251	-1761.471	-1377.562	51.397
	1500.00	141.429	318.549	214.216	-1610.802	156.499	-2088.625	-1759.336	-1350.214	47.019
	1600.00	142.767	327.719	221.026	-1596.592	170.709	-2120.942	-1757.168	-1323.009	43.192
	1700.00	144.085	336.414	227.560	-1582.249	185.052	-2154.153	-1891.916	-1297.236	39.859
	1800.00	145.388	344.687	233.839	-1567.775	199.526	-2188.211	-1888.286	-1262.360	36.633
	1900.00	146.678	352.582	239.882	-1553.172	214.129	-2223.077	-1884.661	-1227.685	33.751
	2000.00	147.958	360.138	245.708	-1538.440	228.861	-2258.716	-1881.052	-1193.201	31.163

References

Phase	H / S	C _p	Remarks
SOL	Nb1	e	Tk1 TPT= 1003., 1133., 1408. / MPT= 3023.

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f kJ / mol	ΔG _f kJ / mol	log K _f [- -]
SOL	298.15	48.713	68.199	68.199	-468.608	0.000	-488.942	-468.608	-462.780	81.077
	300.00	48.716	68.501	68.200	-468.518	0.090	-489.068	-468.610	-462.744	80.571
	400.00	50.201	82.684	70.124	-463.584	5.024	-496.657	-471.013	-460.676	60.158
	500.00	51.901	94.076	73.811	-458.475	10.133	-505.513	-472.733	-457.916	47.838
	600.00	53.163	103.656	78.008	-453.219	15.389	-515.413	-474.156	-454.812	39.595
	700.00	54.106	111.925	82.276	-447.853	20.755	-526.201	-475.409	-451.490	33.691
	800.00	54.870	119.201	86.446	-442.404	26.204	-537.765	-476.868	-447.977	29.250
	900.00	55.554	125.704	90.453	-436.882	31.726	-550.016	-532.144	-443.032	25.713
	1000.00	56.221	131.592	94.277	-431.293	37.315	-562.885	-532.156	-433.129	22.624
	1100.00	56.781	136.977	97.918	-425.643	42.965	-576.317	-539.419	-422.877	20.081
	1200.00	57.328	141.941	101.382	-419.937	48.671	-590.266	-539.076	-412.298	17.947
	1300.00	57.869	146.551	104.681	-414.177	54.431	-604.694	-538.685	-401.748	16.142
	1400.00	58.401	150.859	107.828	-408.364	60.244	-619.567	-538.245	-391.231	14.597
	1500.00	58.926	154.906	110.833	-402.498	66.110	-634.857	-537.757	-380.746	13.259
	1600.00	59.445	158.726	113.708	-396.579	72.029	-650.540	-537.221	-370.296	12.089
	1700.00	59.961	162.345	116.463	-390.609	77.999	-666.595	-673.575	-361.176	11.098
	1800.00	60.476	165.787	119.109	-384.587	84.021	-683.003	-671.515	-342.859	9.949
	1900.00	60.990	169.071	121.652	-378.514	90.094	-699.748	-669.410	-324.657	8.925
	2000.00	61.505	172.212	124.102	-372.389	96.219	-716.813	-667.262	-306.568	8.007
	2100.00	62.022	175.225	126.466	-366.212	102.396	-734.186	-665.070	-288.587	7.178
	2200.00	62.542	178.123	128.748	-359.984	108.624	-751.854	-662.836	-270.711	6.427
	2300.00	63.066	180.914	130.956	-353.704	114.904	-769.807	-660.559	-252.938	5.744
	2400.00	63.595	183.610	133.094	-347.371	121.237	-788.034	-658.239	-235.265	5.120
	2500.00	64.129	186.216	135.167	-340.985	127.623	-806.526	-655.877	-217.689	4.548

References

Phase	H / S	C _p
SOL	Ja1	Ja1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		[-]
GAS	298.15	35.488	243.108	243.108	108.198	0.000	35.715	108.198	61.877	-10.841
	300.00	35.507	243.327	243.108	108.264	0.066	35.265	108.172	61.590	-10.724
	400.00	36.345	253.667	244.513	111.860	3.662	10.393	104.431	46.374	-6.056
	500.00	36.814	261.833	247.189	115.520	7.322	-15.396	101.263	32.201	-3.364
	600.00	37.080	268.571	250.207	119.216	11.018	-41.926	98.279	18.674	-1.626
	700.00	37.261	274.301	253.250	122.933	14.735	-69.077	95.378	5.634	-0.420
	800.00	37.421	279.287	256.200	126.667	18.469	-96.762	92.203	-6.974	0.455
	900.00	37.598	283.704	259.015	130.418	22.220	-124.915	35.156	-17.932	1.041
	1000.00	37.813	287.676	261.686	134.188	25.990	-153.488	33.326	-23.732	1.240
	1100.00	38.184	291.296	264.215	137.986	29.788	-182.439	24.210	-28.999	1.377
	1200.00	38.772	294.642	266.613	141.832	33.634	-211.738	22.693	-33.769	1.470
	1300.00	39.638	297.777	268.891	145.750	37.552	-241.360	21.243	-38.415	1.544
	1400.00	40.828	300.756	271.061	149.771	41.573	-271.288	19.889	-42.952	1.603
	1500.00	42.358	303.623	273.137	153.927	45.729	-301.508	18.668	-47.397	1.651
	1600.00	44.212	306.415	275.130	158.253	50.055	-332.010	17.611	-51.766	1.690
	1700.00	46.345	309.158	277.051	162.779	54.581	-362.789	-120.187	-57.370	1.763
	1800.00	48.688	311.872	278.910	167.529	59.331	-393.841	-119.399	-53.696	1.558
	1900.00	51.154	314.570	280.716	172.521	64.323	-425.163	-118.376	-50.073	1.377
	2000.00	53.642	317.258	282.476	177.761	69.563	-456.755	-117.112	-46.509	1.215
	2100.00	56.037	319.933	284.196	183.245	75.047	-488.614	-115.613	-43.015	1.070
	2200.00	58.295	322.593	285.881	188.964	80.766	-520.741	-113.888	-39.598	0.940
	2300.00	60.304	325.230	287.535	194.896	86.698	-553.132	-111.959	-36.263	0.824
	2400.00	62.002	327.833	289.160	201.014	92.816	-585.785	-109.854	-33.017	0.719
	2500.00	63.364	330.393	290.758	207.285	99.087	-618.697	-107.607	-29.861	0.624
	2600.00	64.387	332.899	292.331	213.675	105.477	-651.862	-105.252	-26.797	0.538
	2700.00	65.078	335.343	293.879	220.151	111.953	-685.275	-102.824	-23.826	0.461
	2800.00	65.456	337.718	295.402	226.681	118.483	-718.929	-100.355	-20.945	0.391
	2900.00	65.542	340.017	296.901	233.233	125.035	-752.816	-97.876	-18.153	0.327
	3000.00	65.361	342.236	298.376	239.780	131.582	-786.929	-95.416	-15.446	0.269

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL-1	298.15	101.673	121.754	121.754	-1458.957	0.000	-1495.258	-1458.957	-1346.767	235.948
	300.00	101.776	122.384	121.756	-1458.769	0.188	-1495.484	-1458.969	-1346.071	234.372
	400.00	107.341	152.425	125.815	-1448.313	10.644	-1509.283	-1461.793	-1308.256	170.841
	500.00	112.905	176.975	133.662	-1437.301	21.656	-1525.788	-1463.727	-1269.667	132.641
	600.00	118.470	198.052	142.677	-1425.732	33.225	-1544.563	-1465.157	-1230.710	107.143
	700.00	124.035	216.732	151.946	-1413.607	45.350	-1565.319	-1466.159	-1191.553	88.915
	800.00	129.599	233.658	161.118	-1400.925	58.032	-1587.851	-1467.060	-1152.262	75.235
	900.00	135.164	249.244	170.055	-1387.687	71.270	-1612.006	-1521.431	-1111.629	64.517
	1000.00	140.729	263.773	178.708	-1373.892	85.065	-1637.665	-1520.161	-1066.159	55.690
	1100.00	146.294	277.447	187.068	-1359.541	99.416	-1664.732	-1525.741	-1020.488	48.459
	1200.00	151.858	290.414	195.145	-1344.633	114.324	-1693.131	-1523.294	-974.660	42.426
	1300.00	157.423	302.789	202.953	-1329.169	129.788	-1722.795	-1520.365	-929.056	37.330
	1400.00	162.988	314.659	210.510	-1313.149	145.808	-1753.672	-1516.945	-883.696	32.971
	1429.00	164.601	318.017	212.658	-1308.399	150.558	-1762.846	-1515.860	-870.589	31.823
SOL-2			7.027		10.042					
	1429.00	170.707	325.045	212.658	-1298.357	160.600	-1762.846	-1505.818	-870.589	31.823
	1500.00	170.707	333.322	218.175	-1286.237	172.720	-1786.220	-1502.693	-839.104	29.220
	1600.00	170.707	344.339	225.720	-1269.166	189.791	-1820.109	-1498.339	-795.007	25.954
	1700.00	170.707	354.688	233.005	-1252.095	206.862	-1855.066	-1630.977	-752.476	23.121
	1800.00	170.707	364.446	240.039	-1235.024	223.933	-1891.027	-1625.299	-700.963	20.341
	1878.00	170.707	371.687	245.357	-1221.709	237.248	-1919.738	-1620.909	-661.003	18.385
LIQ			19.160		35.982					
	1878.00	182.004	390.847	245.357	-1185.727	273.230	-1919.738	-1584.927	-661.003	18.385
	1900.00	182.004	392.967	247.054	-1181.723	277.234	-1928.360	-1583.446	-650.188	17.875
	2000.00	182.004	402.302	254.585	-1163.523	295.434	-1968.128	-1576.747	-601.243	15.703

References

Phase	H / S	C _p
SOL-1	Nb1	La1,e
SOL-2	Tk1	e
LIQ	Tk1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	125.519	138.001	138.001	-1639.701	0.000	-1680.846	-1639.701	-1532.175	268.431
	300.00	125.583	138.778	138.003	-1639.469	0.232	-1681.102	-1639.672	-1531.508	266.659
	400.00	129.055	175.381	142.971	-1626.737	12.964	-1696.889	-1638.104	-1495.690	195.317
	500.00	132.528	204.552	152.465	-1613.658	26.043	-1715.934	-1636.583	-1460.264	152.553
	600.00	136.001	229.022	163.239	-1600.231	39.470	-1737.644	-1635.138	-1425.138	124.069
	700.00	139.474	250.247	174.185	-1586.457	53.244	-1761.630	-1633.782	-1390.246	103.741
	800.00	142.946	269.098	184.892	-1572.336	67.365	-1787.615	-1632.529	-1355.542	88.508
	900.00	146.419	286.135	195.210	-1557.868	81.833	-1815.390	-1632.152	-1320.909	76.664
	1000.00	149.892	301.742	205.093	-1543.053	96.648	-1844.794	-1630.759	-1286.399	67.195
	1100.00	153.365	316.191	214.544	-1527.890	111.811	-1875.700	-1636.465	-1251.688	59.438

References

Phase	H / S	C _p	Remarks
SOL	Nb1	e	Ku1,Tk1 MPT= 1808.

TANTALUM										
Ta										
Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K.
	[K ]	[	J / (K mol)	]	[		kJ / mol			[-]
SOL	298.15	25.356	41.505	41.505	0.000	0.000	-12.375	0.000	0.000	0.000
	300.00	25.375	41.662	41.506	0.047	0.047	-12.452	0.000	0.000	0.000
	400.00	26.025	49.066	42.511	2.622	2.622	-17.004	0.000	0.000	0.000
	500.00	26.276	54.905	44.427	5.239	5.239	-22.213	0.000	0.000	0.000
	600.00	26.501	59.714	46.585	7.877	7.877	-27.951	0.000	0.000	0.000
	700.00	26.748	63.817	48.761	10.539	10.539	-34.133	0.000	0.000	0.000
	800.00	26.995	67.405	50.872	13.227	13.227	-40.697	0.000	0.000	0.000
	900.00	27.242	70.599	52.890	15.938	15.938	-47.601	0.000	0.000	0.000
	1000.00	27.489	73.482	54.807	18.675	18.675	-54.807	0.000	0.000	0.000
	1100.00	27.736	76.114	56.626	21.436	21.436	-62.289	0.000	0.000	0.000
	1200.00	27.983	78.537	58.352	24.222	24.222	-70.023	0.000	0.000	0.000
	1300.00	28.359	80.794	59.993	27.041	27.041	-77.991	0.000	0.000	0.000
	1400.00	28.702	82.908	61.555	29.894	29.894	-86.177	0.000	0.000	0.000
	1500.00	29.055	84.900	63.045	32.782	32.782	-94.568	0.000	0.000	0.000
	1600.00	29.417	86.787	64.471	35.706	35.706	-103.153	0.000	0.000	0.000
	1700.00	29.784	88.581	65.837	38.666	38.666	-111.922	0.000	0.000	0.000
	1800.00	30.199	90.297	67.148	41.667	41.667	-120.867	0.000	0.000	0.000
	1900.00	30.636	91.941	68.410	44.708	44.708	-129.979	0.000	0.000	0.000
	2000.00	31.135	93.525	69.627	47.796	47.796	-139.253	0.000	0.000	0.000
	2100.00	31.684	95.057	70.801	50.937	50.937	-148.683	0.000	0.000	0.000
	2200.00	32.275	96.544	71.938	54.134	54.134	-158.263	0.000	0.000	0.000
	2300.00	32.899	97.993	73.039	57.393	57.393	-167.990	0.000	0.000	0.000
	2400.00	33.552	99.406	74.108	60.715	60.715	-177.860	0.000	0.000	0.000
	2500.00	34.229	100.790	75.148	64.104	64.104	-187.870	0.000	0.000	0.000
	2600.00	34.927	102.146	76.161	67.562	67.562	-198.017	0.000	0.000	0.000
	2700.00	35.853	103.481	77.148	71.101	71.101	-208.299	0.000	0.000	0.000
	2800.00	36.939	104.804	78.112	74.739	74.739	-218.713	0.000	0.000	0.000
	2900.00	38.201	106.122	79.055	78.495	78.495	-229.260	0.000	0.000	0.000
	3000.00	39.616	107.441	79.979	82.384	82.384	-239.938	0.000	0.000	0.000
	3100.00	41.451	108.766	80.886	86.427	86.427	-250.748	0.000	0.000	0.000
	3200.00	44.566	110.128	81.779	90.718	90.718	-261.692	0.000	0.000	0.000
	3287.00	48.206	111.370	82.545	94.747	94.747	-271.327	0.000	0.000	0.000
LIQ			9.623		31.631					
	3287.00	41.840	120.993	82.545	126.378	126.378	-271.327	0.000	0.000	0.000
	3300.00	41.840	121.158	82.697	126.922	126.922	-272.901	0.000	0.000	0.000
	3400.00	41.840	122.408	83.847	131.106	131.106	-285.079	0.000	0.000	0.000
	3500.00	41.840	123.620	84.966	135.290	135.290	-297.381	0.000	0.000	0.000
	3600.00	41.840	124.799	86.056	139.474	139.474	-309.802	0.000	0.000	0.000
	3700.00	41.840	125.945	87.119	143.658	143.658	-322.340	0.000	0.000	0.000
	3800.00	41.840	127.061	88.155	147.842	147.842	-334.990	0.000	0.000	0.000
	3900.00	41.840	128.148	89.167	152.026	152.026	-347.751	0.000	0.000	0.000
	4000.00	41.840	129.207	90.155	156.210	156.210	-360.619	0.000	0.000	0.000
	4100.00	41.840	130.240	91.120	160.394	160.394	-373.592	0.000	0.000	0.000
	4200.00	41.840	131.249	92.063	164.578	164.578	-386.666	0.000	0.000	0.000
	4300.00	41.840	132.233	92.986	168.762	168.762	-399.841	0.000	0.000	0.000
	4400.00	41.840	133.195	93.889	172.946	172.946	-413.112	0.000	0.000	0.000
	4500.00	41.840	134.135	94.773	177.130	177.130	-426.479	0.000	0.000	0.000

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
LIQ	4600.00	41.840	135.055	95.639	181.314	181.314	-439.939	0.000	0.000	0.000
	4700.00	41.840	135.955	96.487	185.498	185.498	-453.489	0.000	0.000	0.000
	4800.00	41.840	136.836	97.319	189.682	189.682	-467.129	0.000	0.000	0.000
	4900.00	41.840	137.698	98.134	193.866	193.866	-480.856	0.000	0.000	0.000
	5000.00	41.840	138.544	98.934	198.050	198.050	-494.668	0.000	0.000	0.000
	5100.00	41.840	139.372	99.718	202.234	202.234	-508.564	0.000	0.000	0.000
	5200.00	41.840	140.185	100.489	206.418	206.418	-522.542	0.000	0.000	0.000
	5300.00	41.840	140.982	101.245	210.602	210.602	-536.600	0.000	0.000	0.000
	5400.00	41.840	141.764	101.988	214.786	214.786	-550.738	0.000	0.000	0.000
	5500.00	41.840	142.531	102.719	218.970	218.970	-564.953	0.000	0.000	0.000
	5600.00	41.840	143.285	103.436	223.154	223.154	-579.244	0.000	0.000	0.000
	5700.00	41.840	144.026	104.142	227.338	227.338	-593.609	0.000	0.000	0.000
	5726.00	41.840	144.216	104.324	228.426	228.426	-597.356	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL	Hu1	Hu1	
LIQ	Hu1	Hu1	BPT= 5726., L= 743.12 kJ

TANTALUM (GAS)										
Ta[g]										
Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		
GAS	298.15	20.863	185.214	185.214	781.571	0.000	726.350	781.571	738.724	-129.421
	300.00	20.864	185.343	185.214	781.610	0.039	726.007	781.563	738.458	-128.577
	400.00	21.232	191.381	186.035	783.709	2.138	707.157	781.087	724.161	-94.566
	500.00	22.099	196.205	187.601	785.873	4.302	687.770	780.634	709.984	-74.171
	600.00	23.209	200.330	189.387	788.137	6.566	667.939	780.260	695.890	-60.583
	700.00	24.390	203.996	191.216	790.517	8.946	647.719	779.977	681.852	-50.880
	800.00	25.556	207.330	193.025	793.015	11.444	627.151	779.788	667.848	-43.606
	900.00	26.662	210.404	194.788	795.626	14.055	606.262	779.688	653.863	-37.949
	1000.00	27.685	213.267	196.494	798.344	16.773	585.077	779.669	639.884	-33.424
	1100.00	28.617	215.950	198.142	801.160	19.589	563.615	779.724	625.903	-29.722
	1200.00	29.456	218.477	199.732	804.064	22.493	541.892	779.842	611.915	-26.636
	1300.00	30.204	220.865	201.267	807.048	25.477	519.924	780.007	597.914	-24.024
	1400.00	30.865	223.128	202.748	810.102	28.531	497.723	780.208	583.900	-21.786
	1500.00	31.446	225.278	204.179	813.218	31.647	475.302	780.436	569.870	-19.845
	1600.00	31.955	227.324	205.562	816.389	34.818	452.671	780.683	555.825	-18.146
	1700.00	32.401	229.275	206.900	819.607	38.036	429.841	780.942	541.763	-16.646
	1800.00	32.791	231.138	208.195	822.867	41.296	406.819	781.201	527.686	-15.313
	1900.00	33.136	232.920	209.450	826.164	44.593	383.616	781.456	513.595	-14.120
	2000.00	33.444	234.628	210.667	829.493	47.922	360.238	781.697	499.491	-13.045
	2100.00	33.726	236.267	211.847	832.852	51.281	336.692	781.915	485.375	-12.073
	2200.00	33.991	237.842	212.993	836.238	54.667	312.986	782.104	471.249	-11.189
	2300.00	34.250	239.358	214.107	839.650	58.079	289.126	782.257	457.116	-10.381
	2400.00	34.512	240.821	215.189	843.088	61.517	265.117	782.373	442.977	-9.641
	2500.00	34.787	242.236	216.243	846.553	64.982	240.963	782.449	428.834	-8.960
	2600.00	35.086	243.606	217.269	850.046	68.475	216.671	782.485	414.688	-8.331
	2700.00	35.303	244.934	218.269	853.564	71.993	192.244	782.463	400.542	-7.749
	2800.00	35.547	246.222	219.245	857.107	75.536	167.685	782.368	386.399	-7.208
	2900.00	35.787	247.473	220.197	860.673	79.102	143.000	782.179	372.260	-6.705
	3000.00	36.026	248.691	221.126	864.264	82.693	118.192	781.880	358.130	-6.236
	3100.00	36.266	249.876	222.035	867.879	86.308	93.263	781.452	344.011	-5.797
	3200.00	36.506	251.031	222.923	871.517	89.946	68.218	780.800	329.910	-5.385
	3300.00	36.749	252.158	223.792	875.180	93.609	43.058	748.258	315.959	-5.001
	3400.00	36.995	253.259	224.642	878.867	97.296	17.787	747.761	302.866	-4.653
	3500.00	37.243	254.335	225.475	882.579	101.008	-7.593	747.289	289.788	-4.325
	3600.00	37.493	255.387	226.292	886.316	104.745	-33.079	746.842	276.723	-4.015
	3700.00	37.745	256.418	227.092	890.078	108.507	-58.670	746.419	263.670	-3.722
	3800.00	37.999	257.428	227.877	893.865	112.294	-84.362	746.023	250.628	-3.445
	3900.00	38.254	258.418	228.648	897.677	116.106	-110.155	745.651	237.597	-3.182
	4000.00	38.509	259.390	229.404	901.516	119.945	-136.045	745.305	224.574	-2.933
	4100.00	38.765	260.344	230.147	905.379	123.808	-162.032	744.985	211.560	-2.695
	4200.00	39.019	261.281	230.877	909.268	127.697	-188.113	744.690	198.553	-2.469
	4300.00	39.273	262.203	231.595	913.183	131.612	-214.288	744.421	185.553	-2.254
	4400.00	39.524	263.108	232.301	917.123	135.552	-240.553	744.177	172.559	-2.049
	4500.00	39.772	263.999	232.996	921.088	139.517	-266.909	743.958	159.570	-1.852

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol)]	[————— J / (K mol)]	[————— J / (K mol)]	[————— kJ / mol]	[————— kJ / mol]	[————— kJ / mol]	[————— kJ / mol]	[————— kJ / mol]	[—]
GAS	4600.00	40.017	264.876	233.679	925.077	143.506	-293.353	743.763	146.586	-1.665
	4700.00	40.257	265.739	234.352	929.091	147.520	-319.884	743.593	133.606	-1.485
	4800.00	40.492	266.589	235.015	933.128	151.557	-346.500	743.446	120.629	-1.313
	4900.00	40.721	267.427	235.668	937.189	155.618	-373.201	743.323	107.655	-1.148
	5000.00	40.943	268.251	236.311	941.272	159.701	-399.985	743.222	94.683	-0.989
	5100.00	41.158	269.064	236.945	945.377	163.806	-426.851	743.143	81.713	-0.837
	5200.00	41.364	269.866	237.571	949.504	167.933	-453.798	743.086	68.744	-0.691
	5300.00	41.562	270.655	238.188	953.650	172.079	-480.824	743.048	55.777	-0.550
	5400.00	41.749	271.434	238.796	957.816	176.245	-507.928	743.030	42.809	-0.414
	5500.00	41.926	272.202	239.397	962.000	180.429	-535.110	743.029	29.842	-0.283
	5600.00	42.091	272.959	239.989	966.200	184.629	-562.368	743.046	16.875	-0.157
	5700.00	42.243	273.705	240.574	970.417	188.846	-589.702	743.079	3.908	-0.036
	5800.00	42.383	274.441	241.152	974.649	193.078	-617.109	0.000	0.000	0.000
	5900.00	42.509	275.167	241.722	978.893	197.322	-644.589	0.000	0.000	0.000
	6000.00	42.619	275.882	242.285	983.150	201.579	-672.142	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[$\frac{\text{J}}{\text{K mol}}$]			[$\frac{\text{kJ}}{\text{mol}}$]					
SOL	298.15	48.117	44.350	44.350	-209.200	0.000	-222.423	-209.200	-206.572	36.191
	300.00	48.360	44.649	44.351	-209.111	0.089	-222.505	-209.200	-206.556	35.965
	400.00	57.567	59.973	46.378	-203.762	5.438	-227.751	-209.156	-205.681	26.859
	500.00	62.838	73.427	50.473	-197.723	11.477	-234.436	-209.195	-204.810	21.396
	600.00	66.561	85.228	55.303	-191.245	17.955	-242.382	-209.316	-203.923	17.753
	700.00	69.552	95.720	60.341	-184.435	24.765	-251.439	-209.478	-203.012	15.149
	800.00	72.154	105.180	65.364	-177.347	31.853	-261.491	-209.644	-202.076	13.194
	900.00	74.529	113.817	70.275	-170.011	39.189	-272.447	-209.784	-201.122	11.673
	1000.00	76.763	121.786	75.032	-162.446	46.754	-284.232	-209.880	-200.153	10.455
	1100.00	78.905	129.204	79.624	-154.662	54.538	-296.786	-209.918	-199.178	9.458
	1200.00	80.985	136.159	84.048	-146.667	62.533	-310.058	-209.886	-198.203	8.628
	1300.00	83.020	142.722	88.311	-138.466	70.734	-324.005	-209.788	-197.233	7.925
	1400.00	85.024	148.948	92.422	-130.064	79.136	-338.591	-209.617	-196.273	7.323
	1500.00	87.004	154.882	96.390	-121.462	87.738	-353.785	-209.372	-195.328	6.802
	1600.00	88.966	160.559	100.224	-112.664	96.536	-369.559	-209.049	-194.402	6.347
	1700.00	90.914	166.011	103.935	-103.670	105.530	-385.889	-208.647	-193.498	5.945
	1800.00	92.851	171.263	107.530	-94.481	114.719	-402.754	-208.169	-192.620	5.590
	1900.00	94.779	176.335	111.019	-85.100	124.100	-420.136	-207.612	-191.771	5.272
	2000.00	96.700	181.245	114.408	-75.526	133.674	-438.016	-206.981	-190.954	4.987
	2100.00	98.616	186.009	117.705	-65.760	143.440	-456.380	-206.282	-190.169	4.730
	2200.00	100.527	190.641	120.915	-55.803	153.397	-475.213	-205.516	-189.420	4.497
	2300.00	102.434	195.152	124.045	-45.655	163.545	-494.504	-204.688	-188.706	4.286
	2400.00	104.338	199.552	127.100	-35.316	173.884	-514.240	-304.319	-185.893	4.046
	2500.00	106.240	203.850	130.084	-24.787	184.413	-534.411	-303.529	-180.974	3.781
	2600.00	108.138	208.053	133.003	-14.068	195.132	-555.007	-302.617	-176.089	3.538
	2700.00	110.035	212.170	135.859	-3.159	206.041	-576.019	-301.598	-171.242	3.313
	2800.00	111.931	216.206	138.656	7.939	217.139	-597.438	-300.488	-166.434	3.105
	2900.00	113.824	220.167	141.399	19.227	228.427	-619.257	-299.306	-161.667	2.912
	3000.00	115.717	224.058	144.090	30.704	239.904	-641.469	-298.068	-156.942	2.733
	3100.00	117.608	227.883	146.731	42.370	251.570	-664.067	-296.794	-152.259	2.566
	3200.00	119.498	231.647	149.326	54.225	263.425	-687.044	-295.580	-147.616	2.410
	3300.00	121.388	235.353	151.877	66.270	275.470	-710.394	-326.090	-142.884	2.262
	3373.00	122.767	238.024	153.713	75.181	284.381	-727.673	-324.868	-138.844	2.150
LIQ			24.809		83.680					
	3373.00	125.520	262.832	153.713	158.861	368.061	-727.673	-241.188	-138.844	2.150
	3400.00	125.520	263.833	154.583	162.250	371.450	-734.783	-240.643	-138.027	2.121
	3500.00	125.520	267.472	157.757	174.802	384.002	-761.349	-238.625	-135.038	2.015

References

Phase	H / S	C _p
SOL	Sh1	Sh1
LIQ	Sh1	Sh1

TaBr5

TANTALUM PENTABROMIDE

580.468

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	155.711	250.207	250.207	-598.299	0.000	-672.898	-598.299	-547.070	95.844
	300.00	155.938	251.171	250.210	-598.011	0.288	-673.362	-598.408	-546.752	95.198
	400.00	168.197	297.711	256.473	-581.804	16.495	-700.888	-670.982	-514.342	67.166
	500.00	180.456	336.560	268.704	-564.371	33.928	-732.651	-665.396	-475.806	49.707
	513.00	182.050	341.212	270.483	-562.015	36.284	-737.057	-664.587	-470.887	47.947
LIQ			73.404		37.656					
	513.00	184.096	414.615	270.483	-524.359	73.940	-737.057	-626.931	-470.887	47.947
	600.00	184.096	443.455	293.528	-508.343	89.956	-774.416	-621.301	-444.877	38.730
	617.00	184.096	448.598	297.730	-505.213	93.086	-781.998	-620.207	-439.893	37.241

References

Phase	H / S	C _p	Remarks
SOL	Nb1/e	A2	
LIQ	A2	e	Pa2 BPT= 617., L= 62.3 kJ

TaBr5[g]

TANTALUM PENTABROMIDE (GAS)

580.468

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	126.860	456.291	456.291	-483.670	0.000	-619.713	-483.670	-493.885	86.527
	300.00	126.935	457.076	456.293	-483.435	0.235	-620.558	-483.832	-493.948	86.004
	400.00	129.574	494.009	461.311	-470.591	13.079	-668.194	-559.768	-481.649	62.897
	500.00	130.788	523.068	470.860	-457.566	26.104	-719.100	-558.591	-462.255	48.291
	600.00	131.440	546.977	481.613	-444.451	39.219	-772.638	-557.410	-443.099	38.575
	700.00	131.827	567.270	492.436	-431.287	52.383	-828.376	-556.246	-424.139	31.650
	800.00	132.073	584.890	502.916	-418.091	65.579	-886.003	-555.106	-405.345	26.466
	900.00	132.237	600.456	512.906	-404.875	78.795	-945.285	-553.995	-386.692	22.443
	1000.00	132.350	614.395	522.370	-391.645	92.025	-1006.040	-552.916	-368.160	19.231
	1100.00	132.430	627.013	531.319	-378.406	105.264	-1068.120	-551.871	-349.736	16.608
	1200.00	132.487	638.539	539.780	-365.160	118.510	-1131.406	-550.859	-331.405	14.426

References

Phase	H / S	C _p
GAS	Pa2	Pa2

Phase	T [K]	C _p [————— J / (K mol) —————]	S —(G-H298)/T— [—————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]	
SOL	298.15	36.789	42.384	42.384	-144.097	0.000	-156.734	-144.097	-142.647	24.991
	300.00	36.904	42.612	42.385	-144.029	0.068	-156.812	-144.092	-142.638	24.836
	400.00	41.665	53.943	43.897	-140.079	4.018	-161.656	-143.754	-142.203	18.570
	500.00	44.529	63.572	46.894	-135.758	8.339	-167.544	-143.381	-141.858	14.820
	600.00	46.449	71.870	50.382	-131.204	12.893	-174.326	-143.045	-141.586	12.326
	700.00	47.888	79.143	53.982	-126.484	17.613	-181.884	-142.766	-141.366	10.549
	800.00	49.075	85.617	57.539	-121.635	22.462	-190.128	-142.528	-141.182	9.218
	900.00	50.105	91.458	60.988	-116.674	27.423	-198.986	-142.312	-141.027	8.185
	1000.00	51.048	96.786	64.305	-111.616	32.481	-208.402	-142.110	-140.896	7.360
	1100.00	51.939	101.694	67.484	-106.467	37.630	-218.330	-141.910	-140.784	6.685
	1200.00	52.795	106.250	70.527	-101.230	42.867	-228.729	-141.705	-140.691	6.124
	1300.00	53.627	110.509	73.441	-95.908	48.189	-239.570	-141.494	-140.615	5.650
	1400.00	54.440	114.513	76.233	-90.505	53.592	-250.823	-141.273	-140.555	5.244
	1500.00	55.240	118.296	78.912	-85.021	59.076	-262.465	-141.036	-140.512	4.893
	1600.00	56.030	121.886	81.487	-79.457	64.640	-274.476	-140.780	-140.485	4.586
	1700.00	56.812	125.307	83.964	-73.815	70.282	-286.836	-140.502	-140.475	4.316
	1800.00	57.588	128.576	86.353	-68.095	76.002	-299.532	-140.203	-140.482	4.077
	1900.00	58.359	131.710	88.658	-62.298	81.799	-312.547	-139.882	-140.506	3.863
	2000.00	59.126	134.723	90.886	-56.423	87.674	-325.870	-139.543	-140.548	3.671
	2100.00	59.890	137.626	93.043	-50.473	93.624	-339.488	-139.192	-140.607	3.497
	2200.00	60.652	140.430	95.134	-44.445	99.652	-353.392	-138.832	-140.683	3.340
	2300.00	61.411	143.143	97.163	-38.342	105.755	-367.571	-138.466	-140.775	3.197
	2400.00	62.168	145.773	99.134	-32.163	111.934	-382.018	-138.098	-140.883	3.066
	2500.00	62.924	148.326	101.050	-25.909	118.188	-396.723	-137.728	-141.007	2.946
	2600.00	63.679	150.808	102.917	-19.579	124.518	-411.680	-137.359	-141.145	2.836
	2700.00	64.432	153.226	104.735	-13.173	130.924	-426.883	-137.003	-141.298	2.734
	2800.00	65.185	155.583	106.509	-6.692	137.405	-442.324	-136.678	-141.463	2.639
	2900.00	65.936	157.883	108.241	-0.136	143.961	-457.997	-136.402	-141.639	2.551
	3000.00	66.687	160.131	109.934	6.495	150.592	-473.898	-136.192	-141.823	2.469
	3100.00	67.438	162.330	111.589	13.201	157.298	-490.022	-136.066	-142.013	2.393
	3200.00	68.187	164.483	113.208	19.983	164.080	-506.363	-136.119	-142.205	2.321
	3300.00	68.937	166.593	114.794	26.839	170.936	-522.917	-168.018	-142.266	2.252
	3400.00	69.685	168.662	116.348	33.770	177.867	-539.680	-167.828	-141.488	2.174
	3500.00	70.434	170.693	117.872	40.776	184.873	-556.648	-167.569	-140.717	2.100

References

Phase	H / S	C _p
SOL	Sh1,Ja1	Ja1

Phase	T [K]	C _p [——— J / (K mol) ———]	S [——— J / (K mol) ———]	-(G-H298)/T [——— kJ / mol ———]	H [——— kJ / mol ———]	H-H298 [——— kJ / mol ———]	G [——— kJ / mol ———]	ΔH _f [——— kJ / mol ———]	ΔG _f [——— kJ / mol ———]	log K _f [—]
SOL	298.15	60.947	83.680	83.680	-213.401	0.000	-238.350	-213.401	-211.889	37.122
	300.00	61.092	84.057	83.681	-213.288	0.113	-238.505	-213.398	-211.880	36.892
	400.00	66.654	102.480	86.155	-206.871	6.530	-247.863	-213.168	-211.406	27.607
	500.00	69.977	117.735	90.990	-200.029	13.372	-258.896	-212.891	-210.997	22.043
	600.00	72.419	130.717	96.556	-192.904	20.497	-271.335	-212.622	-210.644	18.338
	700.00	74.444	142.037	102.262	-185.559	27.842	-284.984	-212.380	-210.333	15.695
	800.00	76.248	152.097	107.874	-178.023	35.378	-299.700	-212.142	-210.057	13.715
	900.00	77.922	161.175	113.300	-170.313	43.088	-315.371	-211.889	-209.812	12.177
	1000.00	79.517	169.468	118.508	-162.441	50.960	-331.909	-211.609	-209.595	10.948
	1100.00	81.059	177.120	123.493	-154.412	58.989	-349.243	-211.291	-209.409	9.944
	1200.00	82.566	184.238	128.262	-146.230	67.171	-367.315	-210.927	-209.254	9.109
	1300.00	84.047	190.905	132.827	-137.899	75.502	-386.076	-210.527	-209.130	8.403
	1400.00	85.510	197.187	137.202	-129.421	83.980	-405.483	-210.084	-209.039	7.799
	1500.00	86.960	203.136	141.401	-120.798	92.603	-425.502	-209.595	-208.981	7.277
	1600.00	88.399	208.795	145.438	-112.030	101.371	-446.101	-209.058	-208.957	6.822
	1700.00	89.831	214.197	149.324	-103.118	110.283	-467.253	-208.471	-208.969	6.421
	1800.00	91.256	219.372	153.073	-94.064	119.337	-488.933	-207.839	-209.016	6.065
	1900.00	92.676	224.344	156.694	-84.867	128.534	-511.120	-207.159	-209.100	5.749
	2000.00	94.093	229.133	160.197	-75.529	137.872	-533.796	-206.444	-209.220	5.464
	2100.00	95.506	233.758	163.591	-66.049	147.352	-556.941	-205.705	-209.377	5.208
	2200.00	96.917	238.234	166.882	-56.427	156.974	-580.542	-204.948	-209.570	4.976
	2300.00	98.325	242.573	170.079	-46.665	166.736	-604.584	-204.182	-209.797	4.765
	2400.00	99.732	246.788	173.188	-36.763	176.638	-629.053	-203.412	-210.058	4.572
	2500.00	101.136	250.887	176.215	-26.719	186.682	-653.937	-202.642	-210.351	4.395
	2600.00	102.540	254.881	179.164	-16.535	196.866	-679.227	-201.877	-210.674	4.232
	2700.00	103.943	258.778	182.041	-6.211	207.190	-704.910	-201.142	-211.026	4.083
	2800.00	105.344	262.583	184.849	4.253	217.654	-730.979	-200.472	-211.405	3.944
	2900.00	106.745	266.304	187.594	14.858	228.259	-757.424	-199.903	-211.806	3.815
	3000.00	108.145	269.947	190.279	25.602	239.003	-784.237	-199.469	-212.224	3.695
	3100.00	109.544	273.515	192.906	36.487	249.888	-811.411	-199.207	-212.654	3.583
	3200.00	110.943	277.015	195.480	47.511	260.912	-838.938	-199.308	-213.088	3.478
	3300.00	112.341	280.451	198.003	58.675	272.076	-866.812	-263.104	-213.260	3.376
	3400.00	113.739	283.825	200.478	69.979	283.380	-895.026	-262.724	-211.754	3.253
	3500.00	115.136	287.142	202.907	81.423	294.824	-923.575	-262.212	-210.263	3.138
	3600.00	116.534	290.405	205.292	93.006	306.407	-952.453	-261.566	-208.787	3.029
	3700.00	117.930	293.617	207.636	104.730	318.131	-981.654	-260.787	-207.331	2.927
	3773.00	118.950	295.931	209.322	113.376	326.777	-1003.173	-260.135	-206.283	2.856

References

Phase	H / S	C _p	Remarks
SOL	Nb1/Sh1	Sh1	Sh1 DPT= 3773. (peritec.)

216.401

TANTALUM MONOCHLORIDE (GAS)

TaCl[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	34.977	259.266	259.266	359.824	0.000	282.524	359.824	328.160	-57.492
	300.00	35.005	259.483	259.267	359.889	0.065	282.044	359.810	327.963	-57.103
	400.00	36.017	269.711	260.655	363.447	3.623	255.562	359.059	317.460	-41.456
	500.00	36.520	277.808	263.304	367.076	7.252	228.172	358.286	307.149	-32.088
	600.00	36.823	284.495	266.295	370.744	10.920	200.047	357.499	296.995	-25.856
	700.00	37.031	290.188	269.311	374.437	14.613	171.306	356.692	286.975	-21.414
	800.00	37.189	295.143	272.237	378.149	18.325	142.034	355.863	277.072	-18.091
	900.00	37.317	299.531	275.031	381.874	22.050	112.296	355.014	267.273	-15.512
	1000.00	37.428	303.469	277.681	385.612	25.788	82.143	354.144	257.571	-13.454
	1100.00	37.526	307.041	280.190	389.359	29.535	51.615	353.254	247.957	-11.774
	1200.00	37.616	310.310	282.566	393.117	33.293	20.745	352.343	238.424	-10.378
	1300.00	37.700	313.324	284.818	396.882	37.058	-10.439	351.403	228.969	-9.200
	1400.00	37.781	316.121	286.955	400.657	40.833	-41.913	350.434	219.587	-8.193
	1500.00	37.858	318.730	288.987	404.439	44.615	-73.657	349.434	210.275	-7.322

References

Phase	H / S	C _p
GAS	Pa2	Pa2

251.853

TANTALUM DICHLORIDE (GAS)

TaCl₂[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	57.404	298.387	298.387	-66.944	0.000	-155.908	-66.944	-77.011	13.492
	300.00	57.462	298.742	298.388	-66.838	0.106	-156.460	-66.947	-77.073	13.420
	400.00	59.503	315.594	300.672	-60.975	5.969	-187.213	-67.127	-80.421	10.502
	500.00	60.455	328.986	305.042	-54.972	11.972	-219.465	-67.312	-83.724	8.747
	600.00	60.979	340.059	309.982	-48.898	18.046	-252.933	-67.511	-86.988	7.573
	700.00	61.299	349.485	314.969	-42.783	24.161	-287.422	-67.735	-90.217	6.732
	800.00	61.512	357.685	319.807	-36.641	30.303	-322.789	-67.986	-93.412	6.099
	900.00	61.663	364.939	324.426	-30.482	36.462	-358.927	-68.265	-96.574	5.605
	1000.00	61.774	371.442	328.808	-24.310	42.634	-395.752	-68.570	-99.703	5.208
	1100.00	61.860	377.334	332.956	-18.128	48.816	-433.196	-68.903	-102.800	4.882
	1200.00	61.928	382.719	336.882	-11.939	55.005	-471.202	-69.264	-105.866	4.608
	1300.00	61.984	387.679	340.601	-5.743	61.201	-509.725	-69.660	-108.900	4.376
	1400.00	62.032	392.274	344.130	0.458	67.402	-548.726	-70.093	-111.903	4.175
	1500.00	62.073	396.555	347.484	6.663	73.607	-588.170	-70.565	-114.873	4.000

References

Phase	H / S	C _p
GAS	Pa2	Pa2

TaCl2.5

TANTALUM 2.5-CHLORIDE

269.580

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		[-]
SOL	298.15	83.208	140.582	140.582	-479.101	0.000	-521.016	-479.101	-425.488	74.544
	300.00	83.264	141.097	140.584	-478.947	0.154	-521.276	-479.072	-425.155	74.026
	400.00	85.348	165.372	143.880	-470.504	8.597	-536.653	-477.539	-407.415	53.203
	500.00	86.504	184.551	150.163	-461.907	17.194	-554.182	-476.022	-390.060	40.749
	600.00	87.295	200.396	157.253	-453.215	25.886	-573.453	-474.512	-373.009	32.473
	700.00	87.912	213.900	164.404	-444.454	34.647	-594.184	-473.009	-356.211	26.581
	800.00	88.438	225.675	171.343	-435.636	43.465	-616.175	-471.510	-339.628	22.175
	900.00	88.910	236.119	177.971	-426.768	52.333	-639.275	-470.011	-323.232	18.760
	1000.00	89.349	245.509	184.263	-417.855	61.246	-663.364	-468.511	-307.004	16.036

References

Phase	H / S	C _p
SOL	Nb1/e	e

TaCl3

TANTALUM TRICHLORIDE

287.306

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		[-]
SOL	298.15	93.096	154.808	154.808	-546.012	0.000	-592.168	-546.012	-480.010	84.096
	300.00	93.224	155.384	154.810	-545.840	0.172	-592.455	-545.981	-479.600	83.506
	400.00	98.314	182.971	158.537	-536.238	9.774	-609.427	-544.155	-457.742	59.775
	500.00	101.546	205.277	165.725	-526.236	19.776	-628.874	-542.127	-436.370	45.587
	600.00	104.047	224.019	173.920	-515.953	30.059	-650.364	-539.934	-415.422	36.166
	700.00	106.203	240.223	182.260	-505.438	40.574	-673.594	-537.597	-394.853	29.464
	800.00	108.175	254.534	190.417	-494.718	51.294	-698.346	-535.122	-374.628	24.461
	900.00	110.040	267.384	198.267	-483.807	62.205	-724.452	-532.511	-354.722	20.588
	1000.00	111.838	279.071	205.772	-472.712	73.300	-751.784	-529.765	-335.113	17.505

References

Phase	H / S	C _p
SOL	Sc2	Sc2

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	75.438	346.001	346.001	-322.168	0.000	-425.328	-322.168	-313.170	54.866
	300.00	75.524	346.468	346.002	-322.028	0.140	-425.969	-322.170	-313.114	54.518
	400.00	78.588	368.676	349.009	-314.301	7.867	-461.772	-322.219	-310.087	40.493
	500.00	80.040	386.386	354.774	-306.362	15.806	-499.555	-322.253	-307.050	32.077
	600.00	80.858	401.057	361.300	-298.314	23.854	-538.948	-322.295	-304.006	26.466
	700.00	81.376	413.563	367.895	-290.200	31.968	-579.695	-322.359	-300.953	22.457
	800.00	81.735	424.454	374.299	-282.044	40.124	-621.607	-322.448	-297.890	19.450
	900.00	82.001	434.097	380.418	-273.857	48.311	-664.544	-322.561	-294.813	17.111
	1000.00	82.209	442.748	386.226	-265.646	56.522	-708.394	-322.698	-291.723	15.238
	1100.00	82.380	450.592	391.726	-257.416	64.752	-753.067	-322.860	-288.618	13.705
	1200.00	82.525	457.766	396.935	-249.170	72.998	-798.490	-323.047	-285.497	12.427
	1300.00	82.652	464.377	401.872	-240.911	81.257	-844.601	-323.266	-282.359	11.345
	1400.00	82.766	470.506	406.558	-232.641	89.527	-891.349	-323.520	-279.203	10.417
	1500.00	82.870	476.220	411.014	-224.359	97.809	-938.688	-323.809	-276.028	9.612

References

Phase	H / S	C _p
GAS	Pa2	Pa2

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	119.820	192.464	192.464	-701.699	0.000	-759.082	-701.699	-613.663	107.511
	300.00	119.988	193.206	192.466	-701.477	0.222	-759.439	-701.650	-613.117	106.753
	400.00	125.886	228.653	197.259	-689.141	12.558	-780.603	-698.824	-584.025	76.266
	500.00	128.616	257.071	206.475	-676.401	25.298	-804.937	-695.842	-555.668	58.050
	600.00	130.099	280.664	216.930	-663.459	38.240	-831.857	-692.808	-527.918	45.959
	700.00	130.993	300.791	227.508	-650.400	51.299	-860.955	-689.766	-500.677	37.361

References

Phase	H / S	C _p
SOL	Nb1/Sc2	Sc2

TaCl4[g]

TANTALUM TETRACHLORIDE (GAS)

322.759

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	98.953	377.297	377.297	-573.585	0.000	-686.076	-573.585	-540.657	94.721
	300.00	99.057	377.909	377.299	-573.402	0.183	-686.775	-573.574	-540.453	94.101
	400.00	102.754	406.987	381.238	-563.285	10.300	-726.080	-572.968	-529.502	69.146
	500.00	104.503	430.125	388.781	-552.913	20.672	-767.976	-572.354	-518.707	54.189
	600.00	105.485	449.273	397.314	-542.410	31.175	-811.973	-571.759	-508.034	44.228
	700.00	106.105	465.583	405.930	-531.828	41.757	-857.736	-571.193	-497.459	37.121
	800.00	106.532	479.781	414.293	-521.195	52.390	-905.020	-570.658	-486.962	31.795
	900.00	106.847	492.348	422.281	-510.525	63.060	-953.638	-570.151	-476.531	27.657
	1000.00	107.092	503.618	429.861	-499.828	73.757	-1003.446	-569.673	-466.154	24.349
	1100.00	107.292	513.835	437.038	-489.108	84.477	-1054.327	-569.222	-455.825	21.645
	1200.00	107.461	523.178	443.832	-478.370	95.215	-1106.184	-568.798	-445.535	19.394
	1300.00	107.608	531.785	450.271	-467.617	105.968	-1158.938	-568.410	-435.279	17.490
	1400.00	107.739	539.765	456.382	-456.849	116.736	-1212.520	-568.057	-425.051	15.859
	1500.00	107.858	547.202	462.192	-446.069	127.516	-1266.873	-567.743	-414.848	14.446

References

Phase	H / S	C _p
GAS	Pa2	Pa2

TaCl5

TANTALUM PENTACHLORIDE

358.211

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	147.904	221.752	221.752	-858.975	0.000	-925.090	-858.975	-746.410	130.768
	300.00	147.904	222.667	221.755	-858.701	0.274	-925.501	-858.905	-745.712	129.840
	400.00	147.904	265.216	227.556	-843.911	15.064	-949.997	-855.358	-708.526	92.524
	489.70	147.904	295.142	237.288	-830.644	28.331	-975.175	-852.436	-675.908	72.097
			71.770		35.146					
LIQ	489.70	216.564	366.912	237.288	-795.498	63.477	-975.175	-817.290	-675.908	72.097
	500.00	216.564	371.420	240.004	-793.267	65.708	-978.977	-816.259	-672.945	70.302
	506.40	216.564	374.174	241.683	-791.881	67.094	-981.363	-815.618	-671.115	69.225

References

Phase	H / S	C _p	Remarks
SOL	G2/Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 BPT= 506.4, L= 53.02 kJ

358.211

TANTALUM PENTACHLORIDE (GAS)

TaCl5[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	120.135	412.987	412.987	–764.835	0.000	–887.967	–764.835	–709.287	124.264
	300.00	120.269	413.730	412.989	–764.613	0.222	–888.732	–764.817	–708.942	123.438
	400.00	125.328	449.110	417.778	–752.302	12.533	–931.946	–763.749	–690.475	90.167
	500.00	127.922	477.384	426.968	–739.627	25.208	–978.319	–762.618	–672.287	70.233
	600.00	129.413	500.850	437.381	–726.754	38.081	–1027.264	–761.471	–654.328	56.964
	700.00	130.342	520.874	447.914	–713.763	51.072	–1078.375	–760.334	–636.561	47.501
	800.00	130.958	538.322	458.148	–700.696	64.139	–1131.353	–759.218	–618.955	40.414
	900.00	131.386	553.773	467.931	–687.577	77.258	–1185.973	–758.125	–601.489	34.909
	1000.00	131.694	567.632	477.220	–674.422	90.413	–1242.055	–757.060	–584.142	30.512
	1100.00	131.923	580.195	486.019	–661.241	103.594	–1299.456	–756.024	–566.900	26.920
	1200.00	132.097	591.682	494.352	–648.040	116.795	–1358.058	–755.019	–549.752	23.930
	1300.00	132.233	602.261	502.252	–634.823	130.012	–1417.762	–754.054	–532.686	21.404
	1400.00	132.340	612.064	509.750	–621.594	143.241	–1478.484	–753.130	–515.692	19.241
	1500.00	132.428	621.198	516.878	–608.356	156.479	–1540.153	–752.251	–498.764	17.368
	1600.00	132.499	629.747	523.668	–595.109	169.726	–1602.704	–751.419	–481.892	15.732
	1700.00	132.560	637.782	530.147	–581.856	182.979	–1666.085	–750.633	–465.071	14.290
	1800.00	132.611	645.360	536.339	–568.598	196.237	–1730.246	–749.902	–448.294	13.009
	1900.00	132.655	652.531	542.268	–555.334	209.501	–1795.143	–749.223	–431.557	11.864
	2000.00	132.694	659.336	547.952	–542.067	222.768	–1860.740	–748.606	–414.854	10.835

References

Phase	H / S	C _p
GAS	Ja1	Ja1

275.940

TANTALUM PENTAFLUORIDE

TaF5

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	161.084	171.544	171.544	–1903.302	0.000	–1954.448	–1903.302	–1790.915	313.761
	300.00	161.084	172.540	171.547	–1903.004	0.298	–1954.766	–1903.196	–1790.218	311.705
	368.00	161.084	205.450	174.875	–1892.050	11.252	–1967.656	–1899.405	–1765.014	250.530
			51.163		18.828					
LIQ	368.00	177.820	256.613	174.875	–1873.222	30.080	–1967.656	–1880.577	–1765.014	250.530
	400.00	177.820	271.440	182.015	–1867.532	35.770	–1976.108	–1878.333	–1755.060	229.187
	500.00	177.820	311.119	204.015	–1849.750	53.552	–2005.310	–1871.576	–1725.031	180.213
	501.00	177.820	311.475	204.230	–1849.572	53.730	–2005.621	–1871.510	–1724.738	179.823

References

Phase	H / S	C _p	Remarks
SOL	Ge1	A2,e	
LIQ	A2	e	BPT= 501., L= 50.6 kJ (calc.)

TaF5[g]

TANTALUM PENTAFLUORIDE (GAS)

275.940

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	103.221	353.478	353.478	-1822.132	0.000	-1927.521	-1822.132	-1763.988	309.043
	300.00	103.564	354.117	353.479	-1821.941	0.191	-1928.176	-1822.133	-1763.627	307.075
	400.00	115.673	385.816	357.719	-1810.893	11.239	-1965.220	-1821.694	-1744.172	227.765
	500.00	121.336	412.305	366.065	-1799.012	23.120	-2005.164	-1820.838	-1724.886	180.198
	600.00	124.462	434.729	375.689	-1786.708	35.424	-2047.545	-1819.854	-1705.787	148.502
	700.00	126.390	454.070	385.537	-1774.159	47.973	-2092.008	-1818.843	-1686.855	125.875
	800.00	127.679	471.037	395.186	-1761.451	60.681	-2138.281	-1817.838	-1668.069	108.914
	900.00	128.598	486.131	404.468	-1748.635	73.497	-2186.153	-1816.853	-1649.407	95.729
	1000.00	129.286	499.717	413.325	-1735.739	86.393	-2235.457	-1815.894	-1630.854	85.187
	1100.00	129.823	512.066	421.748	-1722.783	99.349	-2286.055	-1814.965	-1612.395	76.566
	1200.00	130.257	523.381	429.753	-1709.778	112.354	-2337.835	-1814.067	-1594.019	69.386
	1300.00	130.620	533.822	437.362	-1696.734	125.398	-2390.702	-1813.208	-1575.717	63.313
	1400.00	130.930	543.513	444.602	-1683.656	138.476	-2444.575	-1812.390	-1557.480	58.110
	1500.00	131.201	552.556	451.501	-1670.549	151.583	-2499.383	-1811.614	-1539.299	53.603
	1600.00	131.443	561.032	458.084	-1657.417	164.715	-2555.067	-1810.879	-1521.169	49.661
	1700.00	131.661	569.007	464.377	-1644.261	177.871	-2611.573	-1810.188	-1503.083	46.184
	1800.00	131.863	576.538	470.401	-1631.085	191.047	-2668.854	-1809.544	-1485.037	43.095
	1900.00	132.049	583.673	476.177	-1617.889	204.243	-2726.867	-1808.947	-1467.025	40.331
	2000.00	132.225	590.450	481.722	-1604.676	217.456	-2785.576	-1808.403	-1449.044	37.845

References

Phase	H / S	C _p
GAS	Ge1,e	e

TaI5

TANTALUM PENTAIODIDE

815.470

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	155.655	343.088	343.088	-292.880	0.000	-395.172	-292.880	-296.228	51.898
	300.00	155.816	344.051	343.091	-292.592	0.288	-395.807	-292.891	-296.248	51.581
	400.00	164.548	390.073	349.307	-276.574	16.306	-432.603	-333.544	-295.884	38.638
	500.00	173.280	427.729	361.333	-259.682	33.198	-473.547	-439.754	-276.273	28.862
	600.00	182.012	460.093	375.156	-241.918	50.962	-517.974	-434.005	-244.104	21.251
	700.00	190.744	488.806	389.377	-223.280	69.600	-565.444	-427.437	-212.961	15.891
	769.00	196.769	507.017	399.124	-209.911	82.969	-599.807	-422.424	-192.056	13.046
			10.065		7.740					
LIQ	769.00	184.096	517.082	399.124	-202.171	90.709	-599.807	-414.684	-192.056	13.046
	800.00	184.096	524.358	403.837	-196.464	96.416	-615.950	-412.738	-183.120	11.957
	816.50	184.096	528.116	406.311	-193.426	99.454	-624.633	-411.704	-178.395	11.413

References

Phase	H / S	C _p	Remarks
SOL	Ge1/A2	A2	
LIQ	Tk1	e	Tk1 NBPT= 816.5

Phase	T [K]	C _p [————— J / (K mol) —————]	S —(G-H298)/T	—(G-H298)/T	H [————— kJ / mol —————]	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	135.232	472.341	472.341	-197.066	0.000	-337.894	-197.066	-238.950	41.863
	300.00	135.307	473.178	472.343	-196.816	0.250	-338.769	-197.115	-239.210	41.650
	400.00	137.946	512.519	477.689	-183.134	13.932	-388.142	-240.105	-251.423	32.832
	500.00	139.160	543.447	487.859	-169.272	27.794	-440.995	-349.344	-243.722	25.461
	600.00	139.812	568.882	499.306	-155.320	41.746	-496.649	-347.408	-222.780	19.395
	700.00	140.199	590.465	510.826	-141.318	55.748	-554.644	-345.475	-202.161	15.085
	800.00	140.446	609.203	521.977	-127.285	69.781	-614.648	-343.560	-181.819	11.872
	900.00	140.610	625.756	532.607	-113.232	83.834	-676.412	-341.669	-161.715	9.386
	1000.00	140.723	640.577	542.675	-99.165	97.901	-739.741	-339.808	-141.820	7.408
	1100.00	140.802	653.993	552.195	-85.088	111.978	-804.481	-337.979	-122.110	5.799
	1200.00	140.859	666.247	561.196	-71.005	126.061	-870.501	-336.185	-102.565	4.465
	1300.00	140.900	677.523	569.716	-56.917	140.149	-937.697	-334.435	-83.168	3.342
	1400.00	140.930	687.966	577.794	-42.825	154.241	-1005.978	-332.731	-63.904	2.384
	1500.00	140.951	697.690	585.467	-28.731	168.335	-1075.267	-331.075	-44.760	1.559
	1600.00	140.965	706.787	592.768	-14.636	182.430	-1145.495	-329.468	-25.725	0.840
	1700.00	140.974	715.334	599.729	-0.539	196.527	-1216.606	-327.911	-6.789	0.209
	1800.00	140.980	723.392	606.378	13.559	210.625	-1288.546	-326.410	12.057	-0.350
	1900.00	140.982	731.014	612.739	27.657	224.723	-1361.270	-324.963	30.821	-0.847
	2000.00	140.981	738.246	618.835	41.755	238.821	-1434.736	-323.577	49.510	-1.293

References

Phase	H / S	C _p
GAS	Tk1,e	e

TaN

TANTALUM MONONITRIDE

194.955

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	41.867	51.045	51.045	-252.295	0.000	-267.514	-252.295	-226.575	39.695
	300.00	42.047	51.304	51.046	-252.217	0.078	-267.609	-252.291	-226.416	39.422
	400.00	48.461	64.405	52.788	-247.648	4.647	-273.410	-251.756	-217.855	28.449
	500.00	51.576	75.589	56.260	-242.630	9.665	-280.425	-250.825	-209.482	21.884
	600.00	53.392	85.166	60.299	-237.375	14.920	-288.475	-249.699	-201.317	17.526
	700.00	54.596	93.492	64.460	-231.972	20.323	-297.417	-248.480	-193.349	14.428
	800.00	55.472	100.843	68.557	-226.467	25.828	-307.141	-247.216	-185.559	12.116
	900.00	56.158	107.417	72.516	-220.884	31.411	-317.559	-245.934	-177.929	10.327
	1000.00	56.727	113.364	76.308	-215.239	37.056	-328.603	-244.645	-170.442	8.903
	1100.00	57.218	118.795	79.927	-209.541	42.754	-340.215	-243.357	-163.084	7.744
	1200.00	57.657	123.792	83.377	-203.797	48.498	-352.348	-242.073	-155.843	6.784
	1300.00	58.058	128.423	86.666	-198.011	54.284	-364.961	-240.804	-148.709	5.975
	1400.00	58.433	132.740	89.805	-192.186	60.109	-378.022	-239.549	-141.672	5.286
	1500.00	58.788	136.783	92.803	-186.325	65.970	-391.500	-238.310	-134.724	4.692
	1600.00	59.128	140.589	95.672	-180.429	71.866	-405.371	-237.087	-127.859	4.174
	1700.00	59.457	144.183	98.421	-174.500	77.795	-419.611	-235.880	-121.069	3.720
	1800.00	59.776	147.591	101.059	-168.538	83.757	-434.201	-234.694	-114.350	3.318
	1900.00	60.088	150.831	103.594	-162.545	89.750	-449.123	-233.527	-107.696	2.961
	2000.00	60.394	153.921	106.034	-156.521	95.774	-464.362	-232.385	-101.103	2.641
	2100.00	60.695	156.875	108.385	-150.466	101.829	-479.903	-231.273	-94.566	2.352
	2200.00	60.993	159.705	110.654	-144.382	107.913	-495.733	-230.197	-88.082	2.091
	2300.00	61.287	162.423	112.846	-138.268	114.027	-511.840	-229.158	-81.645	1.854
	2400.00	61.578	165.037	114.966	-132.124	120.171	-528.214	-228.159	-75.253	1.638
	2500.00	61.867	167.557	117.020	-125.952	126.343	-544.845	-227.204	-68.902	1.440
	2600.00	62.155	169.989	119.011	-119.751	132.544	-561.723	-226.294	-62.588	1.257
	2700.00	62.440	172.340	120.943	-113.521	138.774	-578.840	-225.441	-56.308	1.089
	2800.00	62.724	174.616	122.819	-107.263	145.032	-596.188	-224.663	-50.058	0.934
	2900.00	63.007	176.822	124.643	-100.976	151.319	-613.761	-223.979	-43.835	0.790
	3000.00	63.289	178.963	126.418	-94.662	157.633	-631.550	-223.403	-37.633	0.655
	3100.00	63.570	181.043	128.147	-88.319	163.976	-649.551	-222.956	-31.448	0.530
	3200.00	63.850	183.065	129.832	-81.948	170.347	-667.757	-222.732	-25.275	0.413
	3300.00	64.129	185.035	131.475	-75.549	176.746	-686.163	-254.397	-18.979	0.300
	3363.00	64.305	186.249	132.490	-71.503	180.792	-697.858	-254.160	-14.487	0.225
			19.906		66.944					
LIQ	3363.00	62.760	206.155	132.490	-4.559	247.736	-697.858	-187.216	-14.487	0.225
	3400.00	62.760	206.842	133.295	-2.237	250.058	-705.499	-187.132	-12.587	0.193
	3500.00	62.760	208.661	135.423	4.039	256.334	-726.274	-186.905	-7.456	0.111

References

Phase	H / S	C _p
SOL	Ge1	Sh1,e
LIQ	Sh1	Sh1

Phase	T [K]	C _p [————— J / (K mol) —————]	S —(G-H298)/T— [————— kJ / mol —————]	H —(G-H298)— [————— kJ / mol —————]	H-H298	G	ΔH _f	ΔG _f	log K _f [-]	
SOL	298.15	67.789	86.149	86.149	-271.542	0.000	-297.227	-271.542	-243.913	42.733
	300.00	67.920	86.568	86.150	-271.416	0.126	-297.387	-271.537	-243.742	42.439
	400.00	73.123	106.891	88.886	-264.340	7.202	-307.096	-271.070	-234.537	30.627
	500.00	76.479	123.588	94.206	-256.851	14.691	-318.645	-270.285	-225.489	23.557
	600.00	79.109	137.772	100.314	-249.067	22.475	-331.731	-269.269	-216.622	18.859
	700.00	81.396	150.141	106.567	-241.040	30.502	-346.139	-268.088	-207.939	15.517
	800.00	83.500	161.149	112.714	-232.794	38.748	-361.714	-266.771	-199.435	13.022
	900.00	85.497	171.100	118.658	-224.344	47.198	-378.334	-265.332	-191.103	11.091
	1000.00	87.429	180.208	124.364	-215.697	55.845	-395.906	-263.778	-182.938	9.556
	1100.00	89.317	188.630	129.828	-206.859	64.683	-414.353	-262.112	-174.933	8.307
	1200.00	91.176	196.482	135.059	-197.835	73.707	-433.613	-260.333	-167.086	7.273
	1300.00	93.015	203.852	140.070	-188.625	82.917	-453.633	-258.459	-159.390	6.404
	1400.00	94.838	210.812	144.877	-179.232	92.310	-474.369	-256.489	-151.843	5.665
	1500.00	96.650	217.417	149.494	-169.658	101.884	-495.784	-254.425	-144.440	5.030
	1600.00	98.454	223.713	153.938	-159.902	111.640	-517.843	-252.266	-137.177	4.478
	1700.00	100.251	229.735	158.221	-149.967	121.575	-540.517	-250.013	-130.053	3.996
	1800.00	102.043	235.516	162.355	-139.852	131.690	-563.781	-247.675	-123.063	3.571
	1900.00	103.831	241.081	166.353	-129.559	141.983	-587.613	-245.249	-116.206	3.195
	2000.00	105.616	246.452	170.225	-119.086	152.456	-611.991	-242.747	-109.479	2.859
	2100.00	107.398	251.649	173.979	-108.436	163.106	-636.898	-240.180	-102.878	2.559
	2200.00	109.178	256.686	177.624	-97.607	173.935	-662.316	-237.556	-96.401	2.289
	2300.00	110.956	261.578	181.169	-86.600	184.942	-688.230	-234.883	-90.045	2.045
	2400.00	112.732	266.338	184.619	-75.416	196.126	-714.627	-232.166	-83.806	1.824
	2500.00	114.508	270.976	187.981	-64.054	207.488	-741.494	-229.410	-77.680	1.623
	2600.00	116.282	275.502	191.260	-52.514	219.028	-768.818	-226.619	-71.666	1.440
	2700.00	118.055	279.923	194.462	-40.797	230.745	-796.590	-223.819	-65.760	1.272
	2800.00	119.827	284.249	197.592	-28.903	242.639	-824.800	-221.043	-59.956	1.119
	2900.00	121.599	288.485	200.654	-16.832	254.710	-853.437	-218.329	-54.252	0.977
	3000.00	123.370	292.637	203.651	-4.584	266.958	-882.494	-215.710	-48.639	0.847
	LIQ			30.683		92.048				
3000.00		94.140	323.319	203.651	87.464	359.006	-882.494	-123.662	-48.639	0.847
3100.00		94.140	326.406	207.561	96.878	368.420	-914.981	-124.186	-46.130	0.777
3200.00		94.140	329.395	211.322	106.292	377.834	-947.772	-125.210	-43.598	0.712
3300.00		94.140	332.292	214.944	115.706	387.248	-980.857	-190.064	-40.772	0.645
3400.00		94.140	335.102	218.437	125.120	396.662	-1014.227	-190.881	-36.236	0.557
3500.00		94.140	337.831	221.809	134.534	406.076	-1047.875	-191.699	-31.676	0.473
3600.00		94.140	340.483	225.069	143.948	415.490	-1081.791	-192.521	-27.092	0.393
3700.00		94.140	343.063	228.224	153.362	424.904	-1115.969	-193.345	-22.486	0.317
3800.00		94.140	345.573	231.279	162.776	434.318	-1150.401	-194.171	-17.857	0.245
3900.00		94.140	348.018	234.241	172.190	443.732	-1185.081	-194.999	-13.206	0.177
4000.00		94.140	350.402	237.115	181.604	453.146	-1220.003	-195.829	-8.534	0.111

References

Phase	H / S	C _p
SOL	Pa3	Ge1
LIQ	Sh1	Sh1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
GAS	298.15	30.597	241.108	241.108	192.464	0.000	120.578	192.464	163.535	-28.651
	300.00	30.628	241.297	241.108	192.521	0.057	120.131	192.447	163.355	-28.443
	400.00	32.156	250.325	242.329	195.662	3.198	95.532	191.527	153.798	-20.084
	500.00	33.402	257.638	244.682	198.942	6.478	70.123	190.661	144.467	-15.092
	600.00	34.444	263.823	247.370	202.336	9.872	44.042	189.837	135.307	-11.779
	700.00	35.349	269.202	250.113	205.827	13.363	17.385	189.038	126.282	-9.423
	800.00	36.157	273.976	252.803	209.403	16.939	-9.778	188.258	117.370	-7.663
	900.00	36.892	278.278	255.398	213.056	20.592	-37.394	187.497	108.555	-6.300
	1000.00	37.565	282.200	257.885	216.779	24.315	-65.421	186.752	99.823	-5.214
	1100.00	38.186	285.810	260.262	220.567	28.103	-93.824	186.025	91.166	-4.329
	1200.00	38.759	289.157	262.532	224.414	31.950	-122.574	185.312	82.574	-3.594
	1300.00	39.289	292.281	264.701	228.317	35.853	-151.648	184.604	74.041	-2.975
	1400.00	39.777	295.211	266.777	232.271	39.807	-181.024	183.898	65.563	-2.446
	1500.00	40.185	297.968	268.766	236.268	43.804	-210.684	183.187	57.135	-1.990
	1600.00	40.554	300.574	270.673	240.306	47.842	-240.613	182.467	48.755	-1.592
	1700.00	40.894	303.043	272.505	244.378	51.914	-270.794	181.734	40.421	-1.242
	1800.00	41.226	305.390	274.267	248.484	56.020	-301.217	180.981	32.130	-0.932
	1900.00	41.562	307.628	275.965	252.624	60.160	-331.869	180.209	23.881	-0.657
	2000.00	41.910	309.768	277.602	256.797	64.333	-362.739	179.413	15.674	-0.409
	2100.00	42.274	311.822	279.183	261.006	68.542	-393.820	178.589	7.507	-0.187
	2200.00	42.657	313.797	280.711	265.253	72.789	-425.101	177.734	-0.620	0.015
	2300.00	43.060	315.702	282.192	269.538	77.074	-456.577	176.846	-8.707	0.198
	2400.00	43.483	317.544	283.626	273.865	81.401	-488.239	175.924	-16.755	0.365
	2500.00	43.926	319.328	285.019	278.236	85.772	-520.083	174.968	-24.764	0.517
	2600.00	44.389	321.059	286.372	282.651	90.187	-552.103	173.978	-32.734	0.658
	2700.00	44.872	322.744	287.688	287.114	94.650	-584.294	172.943	-40.665	0.787
	2800.00	45.373	324.385	288.969	291.626	99.162	-616.651	171.848	-48.556	0.906
	2900.00	45.893	325.986	290.218	296.189	103.725	-649.169	170.677	-56.407	1.016
	3000.00	46.431	327.551	291.437	300.806	108.342	-681.847	169.414	-64.217	1.118

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
GAS	298.15	44.002	280.270	280.270	-200.832	0.000	-284.395	-200.832	-210.855	36.941
	300.00	44.072	280.543	280.271	-200.751	0.081	-284.913	-200.852	-210.917	36.724
	400.00	47.723	293.737	282.045	-196.155	4.677	-313.650	-201.803	-214.123	27.962
	500.00	50.414	304.694	285.510	-191.240	9.592	-343.587	-202.564	-217.112	22.681
	600.00	52.276	314.060	289.507	-186.100	14.732	-374.536	-203.221	-219.958	19.149
	700.00	53.590	322.223	293.610	-180.803	20.029	-406.359	-203.841	-222.699	16.618
	800.00	54.540	329.444	297.647	-175.394	25.438	-438.949	-204.456	-225.351	14.714
	900.00	55.236	335.910	301.545	-169.903	30.929	-472.223	-205.083	-227.925	13.228
	1000.00	55.744	341.758	305.279	-164.353	36.479	-506.111	-205.731	-230.429	12.036
	1100.00	56.144	347.090	308.841	-158.758	42.074	-540.557	-206.406	-232.866	11.058
	1200.00	56.454	351.989	312.235	-153.127	47.705	-575.514	-207.110	-235.241	10.240
	1300.00	56.700	356.518	315.470	-147.469	53.363	-610.943	-207.854	-237.555	9.545
	1400.00	56.901	360.728	318.554	-141.789	59.043	-646.807	-208.640	-239.810	8.947
	1500.00	57.069	364.659	321.498	-136.090	64.742	-683.079	-209.470	-242.008	8.427
	1600.00	57.215	368.347	324.312	-130.375	70.457	-719.731	-210.347	-244.149	7.971
	1700.00	57.346	371.820	327.005	-124.647	76.185	-756.741	-211.270	-246.234	7.566
	1800.00	57.466	375.101	329.587	-118.907	81.925	-794.089	-212.247	-248.262	7.204
	1900.00	57.581	378.211	332.065	-113.154	87.678	-831.756	-213.275	-250.236	6.879
	2000.00	57.695	381.168	334.447	-107.390	93.442	-869.726	-214.362	-252.153	6.586
	2100.00	57.808	383.985	336.739	-101.615	99.217	-907.985	-215.513	-254.014	6.318
	2200.00	57.924	386.677	338.949	-95.829	105.003	-946.519	-216.732	-255.820	6.074
	2300.00	58.044	389.255	341.080	-90.030	110.802	-985.316	-218.023	-257.568	5.850
	2400.00	58.170	391.728	343.139	-84.220	116.612	-1024.366	-219.387	-259.258	5.643
	2500.00	58.303	394.105	345.131	-78.396	122.436	-1063.659	-220.827	-260.890	5.451
	2600.00	58.443	396.394	347.059	-72.559	128.273	-1103.184	-222.344	-262.463	5.273
	2700.00	58.591	398.603	348.927	-66.707	134.125	-1142.935	-223.949	-263.976	5.107
	2800.00	58.748	400.736	350.739	-60.840	139.992	-1182.903	-225.658	-265.427	4.952
	2900.00	58.915	402.801	352.499	-54.957	145.875	-1223.080	-227.488	-266.816	4.806
	3000.00	59.092	404.801	354.210	-49.057	151.775	-1263.461	-229.455	-268.139	4.669

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
SOL	298.15	135.054	143.135	143.135	-2045.976	0.000	-2088.652	-2045.976	-1910.991	334.798
	300.00	135.320	143.971	143.137	-2045.726	0.250	-2088.917	-2045.956	-1910.153	332.587
	400.00	147.513	184.660	148.602	-2031.553	14.423	-2105.417	-2044.361	-1865.101	243.557
	500.00	156.879	218.622	159.301	-2016.316	29.660	-2125.627	-2042.005	-1820.545	190.191
	600.00	164.403	247.914	171.684	-2000.238	45.738	-2148.987	-2039.102	-1776.518	154.660
	700.00	170.453	273.729	184.454	-1983.484	62.492	-2175.094	-2035.809	-1733.010	129.319
	800.00	175.191	296.813	197.082	-1966.191	79.785	-2203.642	-2032.233	-1689.994	110.345
	900.00	179.038	317.671	209.340	-1948.479	97.497	-2234.382	-2028.458	-1647.439	95.615
	1000.00	182.753	336.728	221.140	-1930.388	115.588	-2267.116	-2024.495	-1605.314	83.853
	1100.00	184.824	354.243	232.455	-1912.009	133.967	-2301.677	-2020.412	-1563.593	74.249
	1200.00	187.071	370.424	243.287	-1893.412	152.564	-2337.920	-2016.258	-1522.247	66.262
	1300.00	189.021	385.476	253.652	-1874.605	171.371	-2375.724	-2012.048	-1481.250	59.517
	1400.00	190.740	399.548	263.576	-1855.615	190.361	-2414.983	-2007.797	-1440.579	53.749
	1500.00	192.279	412.761	273.086	-1836.463	209.513	-2455.605	-2003.523	-1400.212	48.760
	1600.00	193.674	425.216	282.209	-1817.164	228.812	-2497.510	-1999.239	-1360.131	44.404
	1700.00	194.953	436.996	290.970	-1797.732	248.244	-2540.626	-1994.957	-1320.318	40.568
	1800.00	196.138	448.173	299.396	-1778.177	267.799	-2584.889	-1990.694	-1280.756	37.167
	1900.00	197.246	458.808	307.509	-1758.507	287.469	-2630.242	-1986.455	-1241.431	34.129
	2000.00	198.288	468.952	315.329	-1738.730	307.246	-2676.634	-1982.261	-1202.328	31.402
	2058.00	198.868	474.629	319.739	-1727.212	318.764	-2703.999	-1979.855	-1179.745	29.943
LIQ			58.348		120.081					
	2058.00	242.672	532.977	319.739	-1607.131	438.845	-2703.999	-1859.774	-1179.745	29.943
	2100.00	242.672	537.880	324.053	-1596.939	449.037	-2726.487	-1856.215	-1165.903	29.000
	2200.00	242.672	549.169	334.031	-1572.672	473.304	-2780.844	-1847.863	-1133.227	26.906
	2300.00	242.672	559.956	343.621	-1548.404	497.572	-2836.304	-1839.689	-1100.927	25.003
	2400.00	242.672	570.284	352.852	-1524.137	521.839	-2892.820	-1831.699	-1068.979	23.266
	2500.00	242.672	580.191	361.748	-1499.870	546.106	-2950.347	-1823.896	-1037.360	21.674
	2600.00	242.672	589.709	370.334	-1475.603	570.373	-3008.845	-1816.285	-1006.050	20.212
	2700.00	242.672	598.867	378.630	-1451.336	594.640	-3068.277	-1808.890	-975.028	18.863
	2800.00	242.672	607.693	386.654	-1427.068	618.908	-3128.607	-1801.743	-944.276	17.616
	2900.00	242.672	616.208	394.424	-1402.801	643.175	-3189.805	-1794.882	-913.774	16.459
	3000.00	242.672	624.435	401.954	-1378.534	667.442	-3251.839	-1788.336	-883.503	15.383

References

Phase	H / S	C _p
SOL	Ja1	Ja1
LIQ	Ja1	Ja1

303.305

TANTALUM TRICHLORIDE OXIDE

TaOCl3

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	119.820	177.402	177.402	-892.447	0.000	-945.339	-892.447	-802.599	140.612
	300.00	119.988	178.143	177.404	-892.225	0.222	-945.668	-892.394	-802.042	139.648
	400.00	125.886	213.591	182.197	-879.889	12.558	-965.326	-889.319	-772.380	100.862
	500.00	128.616	242.009	191.413	-867.149	25.298	-988.153	-886.082	-743.518	77.675
	600.00	130.099	265.602	201.868	-854.207	38.240	-1013.568	-882.810	-715.312	62.273

References

Phase	H / S	C _p
SOL	Ge1	e

303.305

TANTALUM TRICHLORIDE OXIDE (GAS)

TaOCl3[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	98.534	361.607	361.607	-783.245	0.000	-891.058	-783.245	-748.318	131.102
	300.00	98.649	362.217	361.609	-783.063	0.182	-891.728	-783.231	-748.101	130.256
	400.00	102.717	391.237	365.538	-772.965	10.280	-929.460	-782.395	-736.514	96.179
	500.00	104.600	414.384	373.072	-762.589	20.656	-969.781	-781.522	-725.145	75.755
	600.00	105.623	433.553	381.600	-752.073	31.172	-1012.205	-780.676	-713.950	62.155
	700.00	106.239	449.885	390.218	-741.478	41.767	-1056.397	-779.886	-702.892	52.450
	800.00	106.640	464.099	398.584	-730.832	52.413	-1102.112	-779.154	-691.944	45.179
	900.00	106.914	476.677	406.575	-720.154	63.091	-1149.163	-778.478	-681.084	39.529
	1000.00	107.110	487.952	414.159	-709.452	73.793	-1197.404	-777.856	-670.296	35.013
	1100.00	107.256	498.168	421.339	-698.733	84.512	-1246.718	-777.284	-659.568	31.320
	1200.00	107.366	507.505	428.136	-688.002	95.243	-1297.008	-776.759	-648.890	28.245
	1300.00	107.452	516.103	434.576	-677.261	105.984	-1348.194	-776.288	-638.254	25.645
	1400.00	107.520	524.068	440.688	-666.512	116.733	-1400.208	-775.871	-627.652	23.418
	1500.00	107.575	531.488	446.497	-655.757	127.488	-1452.990	-775.507	-617.078	21.489
	1600.00	107.620	538.432	452.028	-644.998	138.247	-1506.490	-775.198	-606.526	19.801
	1700.00	107.658	544.958	457.304	-634.234	149.011	-1560.662	-774.945	-595.992	18.313
	1800.00	107.689	551.113	462.347	-623.466	159.779	-1615.469	-774.752	-585.471	16.990
	1900.00	107.715	556.936	467.173	-612.696	170.549	-1670.874	-774.619	-574.960	15.807
	2000.00	107.738	562.461	471.801	-601.923	181.322	-1726.846	-774.553	-564.453	14.742

References

Phase	H / S	C _p
GAS	Sc5	e

TaO2Cl

TANTALUM CHLORIDE DIOXIDE

248.399

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	93.096	97.906	97.906	-1046.000	0.000	-1075.191	-1046.000	-968.390	169.658
	300.00	93.224	98.482	97.907	-1045.828	0.172	-1075.372	-1045.960	-967.909	168.528
	400.00	98.314	126.069	101.634	-1036.226	9.774	-1086.654	-1043.639	-942.233	123.043
	500.00	101.546	148.374	108.823	-1026.224	19.776	-1100.411	-1041.098	-917.172	95.816
	600.00	104.047	167.116	117.017	-1015.941	30.059	-1116.210	-1038.430	-892.636	77.711

References

Phase	H / S	C _p
SOL	A3	e

TaS[g]

TANTALUM MONOSULFIDE (GAS)

213.014

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	33.179	258.179	258.179	514.632	0.000	437.656	514.632	459.588	-80.518
	300.00	33.226	258.384	258.179	514.693	0.061	437.178	514.604	459.247	-79.962
	400.00	34.872	268.201	259.507	518.110	3.478	410.829	510.864	441.111	-57.603
	500.00	35.650	276.075	262.059	521.640	7.008	383.602	507.875	423.997	-44.295
	600.00	36.087	282.617	264.956	525.229	10.597	355.658	505.250	407.476	-35.474
	700.00	36.363	288.202	267.888	528.852	14.220	327.111	502.902	391.367	-29.204
	800.00	36.553	293.071	270.738	532.499	17.867	298.042	500.501	375.596	-24.524
	900.00	36.693	297.385	273.463	536.161	21.529	268.515	445.245	361.284	-20.968
	1000.00	36.802	301.257	276.052	539.836	25.204	238.580	444.349	352.002	-18.387
	1100.00	36.891	304.769	278.506	543.521	28.889	208.276	443.430	342.812	-16.279
	1200.00	36.966	307.982	280.830	547.214	32.582	177.636	442.489	333.706	-14.526
	1300.00	37.031	310.943	283.034	550.914	36.282	146.688	441.515	324.680	-13.046
	1400.00	37.090	313.690	285.127	554.620	39.988	115.454	440.509	315.731	-11.780
	1500.00	37.143	316.251	287.118	558.332	43.700	83.956	439.469	306.854	-10.686
	1600.00	37.192	318.649	289.014	562.049	47.417	52.209	438.394	298.048	-9.730
	1700.00	37.238	320.906	290.824	565.770	51.138	20.231	437.283	289.310	-8.889
	1800.00	37.281	323.035	292.555	569.496	54.864	-11.967	436.132	280.639	-8.144
	1900.00	37.323	325.052	294.213	573.226	58.594	-44.373	434.940	272.033	-7.479
	2000.00	37.363	326.967	295.803	576.960	62.328	-76.974	433.702	263.490	-6.882

References

Phase	H / S	C _p
GAS	Mi1	Mi1

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	69.872	75.312	75.312	-353.966	0.000	-376.420	-353.966	-344.930	60.430
	300.00	70.013	75.745	75.313	-353.837	0.129	-376.560	-353.968	-344.874	60.048
	400.00	75.238	96.694	78.134	-346.542	7.424	-385.220	-358.411	-341.661	44.616
	500.00	78.059	113.812	83.611	-338.866	15.100	-395.772	-361.156	-337.196	35.227
	600.00	79.934	128.219	89.877	-330.961	23.005	-407.892	-363.041	-332.208	28.921
	700.00	81.361	140.652	96.262	-322.894	31.072	-421.350	-364.255	-326.969	24.399
	800.00	82.551	151.596	102.509	-314.697	39.269	-435.973	-365.465	-321.563	20.996
	900.00	83.602	161.380	108.516	-306.388	47.578	-451.630	-472.281	-313.693	18.206
	1000.00	84.567	170.239	114.252	-297.979	55.987	-468.218	-470.279	-296.179	15.471

References

Phase	H / S	C _p
SOL	Mi1	e

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-A	298.15	28.891	73.304	73.304	0.000	0.000	-21.855	0.000	0.000	0.000
	300.00	28.885	73.482	73.304	0.053	0.053	-21.991	0.000	0.000	0.000
	400.00	28.574	81.750	74.434	2.926	2.926	-29.773	0.000	0.000	0.000
	500.00	28.263	88.092	76.556	5.768	5.768	-38.278	0.000	0.000	0.000
	600.00	29.937	93.400	78.930	8.682	8.682	-47.358	0.000	0.000	0.000
	700.00	31.404	98.126	81.341	11.750	11.750	-56.939	0.000	0.000	0.000
	800.00	32.836	102.413	83.711	14.962	14.962	-66.969	0.000	0.000	0.000
	900.00	34.306	106.365	86.011	18.318	18.318	-77.410	0.000	0.000	0.000
	1000.00	35.850	110.058	88.233	21.825	21.825	-88.233	0.000	0.000	0.000
	1100.00	37.491	113.551	90.377	25.492	25.492	-99.415	0.000	0.000	0.000
	1200.00	39.241	116.888	92.448	29.327	29.327	-110.938	0.000	0.000	0.000
	1300.00	41.108	120.102	94.453	33.344	33.344	-122.789	0.000	0.000	0.000
	1400.00	43.265	123.227	96.397	37.562	37.562	-134.956	0.000	0.000	0.000
	1500.00	45.434	126.286	98.288	41.997	41.997	-147.432	0.000	0.000	0.000
	1560.00	46.735	128.093	99.399	44.762	44.762	-155.063	0.000	0.000	0.000
SOL-B			3.219		5.021					
	1560.00	27.740	131.311	99.399	49.783	49.783	-155.063	0.000	0.000	0.000
	1600.00	27.740	132.014	100.206	50.892	50.892	-160.330	0.000	0.000	0.000
	1630.00	27.740	132.529	100.796	51.725	51.725	-164.298	0.000	0.000	0.000
LIQ			6.623		10.795					
	1630.00	46.484	139.152	100.796	62.520	62.520	-164.298	0.000	0.000	0.000
	1700.00	46.484	141.106	102.416	65.773	65.773	-174.107	0.000	0.000	0.000
	1800.00	46.484	143.763	104.640	70.422	70.422	-188.352	0.000	0.000	0.000
	1900.00	46.484	146.277	106.766	75.070	75.070	-202.855	0.000	0.000	0.000
	2000.00	46.484	148.661	108.802	79.719	79.719	-217.603	0.000	0.000	0.000
	2100.00	46.484	150.929	110.754	84.367	84.367	-232.584	0.000	0.000	0.000
	2200.00	46.484	153.091	112.630	89.016	89.016	-247.785	0.000	0.000	0.000
	2300.00	46.484	155.158	114.434	93.664	93.664	-263.199	0.000	0.000	0.000
	2400.00	46.484	157.136	116.172	98.312	98.312	-278.814	0.000	0.000	0.000
	2500.00	46.484	159.034	117.849	102.961	102.961	-294.623	0.000	0.000	0.000
	2600.00	46.484	160.857	119.469	107.609	107.609	-310.618	0.000	0.000	0.000
	2700.00	46.484	162.611	121.034	112.258	112.258	-326.792	0.000	0.000	0.000
	2800.00	46.484	164.302	122.549	116.906	116.906	-343.138	0.000	0.000	0.000
	2900.00	46.484	165.933	124.017	121.555	121.555	-359.651	0.000	0.000	0.000
	3000.00	46.484	167.509	125.441	126.203	126.203	-376.323	0.000	0.000	0.000
	3100.00	46.484	169.033	126.823	130.851	130.851	-393.151	0.000	0.000	0.000
	3200.00	46.484	170.509	128.165	135.500	135.500	-410.128	0.000	0.000	0.000
	3300.00	46.484	171.939	129.470	140.148	140.148	-427.251	0.000	0.000	0.000
	3400.00	46.484	173.327	130.740	144.797	144.797	-444.514	0.000	0.000	0.000
	3492.00	46.484	174.568	131.878	149.073	149.073	-460.518	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL-A	Hu1	Hu1	
SOL-B	Hu1	Hu1	
LIQ	Hu1	Hu1	BPT= 3492., L= 330.87 kJ

158.925		TERBIUM (GAS)								Tb[g]
Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _i [—]
GAS	298.15	24.648	203.251	203.251	388.694	0.000	328.095	388.694	349.950	-61.310
	300.00	24.644	203.403	203.251	388.740	0.046	327.719	388.686	349.710	-60.890
	400.00	24.237	210.439	204.214	391.184	2.490	307.009	388.258	336.782	-43.979
	500.00	24.053	215.821	206.017	393.596	4.902	285.685	387.827	323.963	-33.844
	600.00	24.158	220.212	208.028	396.004	7.310	263.877	387.322	311.235	-27.095
	700.00	24.446	223.956	210.043	398.433	9.739	241.664	386.684	298.603	-22.282
	800.00	24.843	227.245	211.991	400.897	12.203	219.101	385.935	286.070	-18.678
	900.00	25.300	230.197	213.853	403.404	14.710	196.226	385.086	273.636	-15.881
	1000.00	25.787	232.888	215.624	405.958	17.264	173.070	384.133	261.303	-13.649
	1100.00	26.286	235.369	217.307	408.562	19.868	149.656	383.070	249.071	-11.827
	1200.00	26.784	237.678	218.910	411.215	22.521	126.002	381.888	236.940	-10.314
	1300.00	27.274	239.841	220.438	413.918	25.224	102.125	380.575	224.914	-9.037
	1400.00	27.749	241.880	221.897	416.670	27.976	78.038	379.108	212.994	-7.947
	1500.00	28.205	243.810	223.294	419.467	30.773	53.753	377.471	201.184	-7.006
	1600.00	28.591	245.643	224.634	422.307	33.613	29.279	371.415	189.609	-6.190
	1700.00	28.952	247.387	225.922	425.185	36.491	4.627	359.411	178.735	-5.492
	1800.00	29.275	249.051	227.161	428.097	39.403	-20.195	357.675	168.157	-4.880
	1900.00	29.559	250.642	228.355	431.039	42.345	-45.181	355.968	157.675	-4.335
	2000.00	29.805	252.164	229.508	434.007	45.313	-70.321	354.288	147.282	-3.847
	2100.00	30.016	253.624	230.622	436.998	48.304	-95.611	352.631	136.972	-3.407
	2200.00	30.198	255.024	231.699	440.009	51.315	-121.044	350.994	126.741	-3.009
	2300.00	30.355	256.370	232.743	443.037	54.343	-146.614	349.373	116.584	-2.648
	2400.00	30.491	257.665	233.754	446.080	57.386	-172.317	347.767	106.497	-2.318
	2500.00	30.611	258.912	234.736	449.135	60.441	-198.146	346.174	96.477	-2.016
	2600.00	30.720	260.115	235.689	452.201	63.507	-224.097	344.592	86.521	-1.738
	2700.00	30.819	261.276	236.615	455.278	66.584	-250.167	343.021	76.625	-1.482
	2800.00	30.914	262.399	237.516	458.365	69.671	-276.351	341.459	66.787	-1.246
	2900.00	31.007	263.485	238.393	461.461	72.767	-302.646	339.907	57.005	-1.027
	3000.00	31.099	264.538	239.247	464.567	75.873	-329.047	338.364	47.276	-0.823
	3100.00	31.195	265.559	240.080	467.681	78.987	-355.552	336.830	37.598	-0.634
	3200.00	31.295	266.551	240.891	470.806	82.112	-382.158	335.306	27.970	-0.457
	3300.00	31.402	267.516	241.684	473.940	85.246	-408.862	333.792	18.389	-0.291
	3400.00	31.517	268.455	242.457	477.086	88.392	-435.661	332.290	8.854	-0.136
	3500.00	31.641	269.370	243.213	480.244	91.550	-462.552	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

TbBr3[g]

TERBIUM TRIBROMIDE (GAS)

398.637

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
GAS	298.15	79.937	402.439	402.439	-540.573	0.000	-660.560	-540.573	-570.633	99.972
	300.00	79.988	402.933	402.440	-540.425	0.148	-661.305	-540.688	-570.819	99.388
	400.00	81.958	426.245	405.605	-532.317	8.256	-702.815	-587.177	-571.317	74.606
	500.00	83.123	444.667	411.640	-524.059	16.514	-746.393	-587.299	-567.336	59.269
	600.00	83.970	459.900	418.450	-515.703	24.870	-791.643	-587.434	-563.332	49.042
	700.00	84.667	472.898	425.323	-507.270	33.303	-838.299	-587.672	-559.298	41.735
	800.00	85.284	484.245	431.994	-498.772	41.801	-886.168	-588.007	-555.223	36.252
	900.00	85.854	494.323	438.370	-490.215	50.358	-935.106	-588.443	-551.100	31.985
	1000.00	86.396	503.397	444.426	-481.602	58.971	-984.999	-588.985	-546.922	28.568
	1100.00	86.919	511.656	450.168	-472.936	67.637	-1035.758	-589.645	-542.685	25.770
	1200.00	87.429	519.241	455.612	-464.219	76.354	-1087.308	-590.432	-538.382	23.435
	1300.00	87.931	526.259	460.780	-455.451	85.122	-1139.587	-591.359	-534.008	21.457
	1400.00	88.425	532.793	465.693	-446.633	93.940	-1192.544	-592.447	-529.557	19.758
	1500.00	88.915	538.911	470.373	-437.766	102.807	-1246.132	-593.710	-525.022	18.283
	1600.00	89.401	544.665	474.838	-428.850	111.723	-1300.314	-599.394	-520.278	16.985
	1700.00	89.884	550.099	479.107	-419.886	120.687	-1355.054	-611.022	-514.856	15.820
	1800.00	90.365	555.250	483.195	-410.873	129.700	-1410.324	-612.378	-509.160	14.775
	1900.00	90.845	560.149	487.117	-401.813	138.760	-1466.096	-613.693	-503.389	13.839
	2000.00	91.322	564.821	490.887	-392.704	147.869	-1522.346	-614.967	-497.551	12.995

References

Phase	H / S	C _p
GAS	Pa2	Pa2

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL-A	298.15	97.487	153.134	153.134	-997.047	0.000	-1042.704	-997.047	-921.065	161.367
	300.00	97.590	153.738	153.136	-996.867	0.180	-1042.988	-997.014	-920.594	160.290
	400.00	102.218	182.482	157.024	-986.864	10.183	-1059.857	-995.085	-895.403	116.928
	500.00	105.926	205.699	164.510	-976.452	20.595	-1079.302	-992.872	-870.733	90.965
	600.00	109.270	225.311	173.050	-965.691	31.356	-1100.877	-990.477	-846.528	73.697
	700.00	112.444	242.395	181.762	-954.604	42.443	-1124.280	-987.973	-822.733	61.393
	783.00	115.007	255.136	188.875	-945.164	51.883	-1144.936	-985.800	-803.264	53.586
SOL-B			17.981		14.079					
	783.00	124.934	273.117	188.875	-931.085	65.962	-1144.936	-971.721	-803.264	53.586
	800.00	124.934	275.800	190.693	-928.961	68.086	-1149.602	-971.100	-799.613	52.209
	855.00	124.934	284.107	196.438	-922.090	74.957	-1165.002	-969.127	-787.890	48.135
LIQ			22.633		19.351					
	855.00	144.474	306.740	196.438	-902.739	94.308	-1165.002	-949.776	-787.890	48.135
	900.00	144.474	314.151	202.140	-896.238	100.809	-1178.973	-947.322	-779.433	45.237
	1000.00	144.474	329.372	214.116	-881.790	115.257	-1211.163	-941.993	-761.066	39.754

References

Phase	H / S	C _p
SOL-A	Nb1/Pa2	Pa2
SOL-B	Dw4,Pa2	Dw4,Pa2
LIQ	Dw4,Pa2	Dw4

TbCl3[g]

TERBIUM TRICHLORIDE (GAS)

265.283

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]		[—————]		[-]	
GAS	298.15	78.212	375.335	375.335	-691.197	0.000	-803.103	-691.197	-681.464	119.390
	300.00	78.278	375.819	375.336	-691.052	0.145	-803.798	-691.200	-681.404	118.643
	400.00	80.481	398.684	378.439	-683.099	8.098	-842.573	-691.320	-678.119	88.553
	500.00	81.834	416.793	384.361	-674.981	16.216	-883.378	-691.401	-674.808	70.497
	600.00	83.039	431.821	391.054	-666.737	24.460	-925.829	-691.523	-671.480	58.458
	700.00	84.160	444.707	397.820	-658.376	32.821	-969.671	-691.745	-668.124	49.856
	800.00	85.185	456.013	404.402	-649.908	41.289	-1014.718	-692.047	-664.729	43.402
	900.00	86.095	466.100	410.707	-641.343	49.854	-1060.833	-692.427	-661.293	38.380
	1000.00	86.883	475.213	416.709	-632.693	58.504	-1107.906	-692.896	-657.809	34.360
	1100.00	87.546	483.526	422.411	-623.970	67.227	-1155.849	-693.470	-654.274	31.069
	1200.00	88.087	491.168	427.826	-615.188	76.009	-1204.589	-694.169	-650.681	28.323
	1300.00	88.511	498.236	432.974	-606.357	84.840	-1254.063	-695.014	-647.023	25.998
	1400.00	88.827	504.807	437.873	-597.489	93.708	-1304.219	-696.036	-643.295	24.002
	1500.00	89.044	510.944	442.542	-588.595	102.602	-1355.010	-697.260	-639.486	22.269
	1600.00	89.172	516.695	446.999	-579.683	111.514	-1406.395	-702.938	-635.470	20.746
	1700.00	89.223	522.103	451.259	-570.763	120.434	-1458.338	-714.603	-630.775	19.381
	1800.00	89.209	527.203	455.338	-561.841	129.356	-1510.806	-716.045	-625.803	18.160
	1900.00	89.141	532.024	459.249	-552.923	138.274	-1563.769	-717.502	-620.750	17.066
	2000.00	89.033	536.594	463.003	-544.014	147.183	-1617.202	-718.979	-615.619	16.078

References

Phase	H / S	C _p
GAS	Pa2	Pa2

TbO1.72

TERBIUM 1.72-OXIDE

186.444

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					
SOL	298.15	58.996	80.751	80.751	-953.115	0.000	-977.191	-953.115	-902.734	158.155
	300.00	59.112	81.116	80.752	-953.006	0.109	-977.341	-953.106	-902.421	157.126
	400.00	63.860	98.830	83.135	-946.837	6.278	-986.369	-952.366	-885.626	115.651
	500.00	67.115	113.445	87.778	-940.281	12.834	-997.004	-951.282	-869.061	90.790
	600.00	69.781	125.923	93.120	-933.433	19.682	-1008.987	-950.065	-852.730	74.237
	700.00	72.169	136.862	98.604	-926.334	26.781	-1022.137	-948.833	-836.605	62.428
	800.00	74.409	146.646	104.008	-919.004	34.111	-1036.321	-947.585	-820.658	53.583
	900.00	76.563	155.535	109.247	-911.455	41.660	-1051.437	-946.321	-804.868	46.713
	1000.00	78.664	163.711	114.290	-903.694	49.421	-1067.405	-945.043	-789.219	41.225

References

Phase	H / S	C _p
SOL	Fi2/We1	Pa1

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	58.162	81.170	81.170	-961.902	0.000	-986.103	-961.902	-908.893	159.234
	300.00	58.342	81.530	81.171	-961.794	0.108	-986.253	-961.897	-908.564	158.195
	400.00	65.111	99.354	83.555	-955.582	6.320	-995.324	-961.247	-890.867	116.335
	500.00	68.928	114.325	88.253	-948.866	13.036	-1006.029	-960.141	-873.394	91.243
	600.00	71.583	127.138	93.692	-941.834	20.068	-1018.117	-958.882	-856.162	74.536
	700.00	73.690	138.336	99.287	-934.568	27.334	-1031.403	-957.629	-839.142	62.618
	800.00	75.505	148.297	104.802	-927.106	34.796	-1045.743	-956.399	-822.299	53.691
	900.00	77.149	157.286	110.142	-919.472	42.430	-1061.030	-955.204	-805.609	46.756

References

Phase	H / S	C _p
SOL	Fi2/We1	Pa1

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	61.544	82.843	82.843	-971.525	0.000	-996.225	-971.525	-913.205	159.990
	300.00	61.682	83.224	82.844	-971.411	0.114	-996.378	-971.519	-912.843	158.940
	400.00	67.143	101.793	85.339	-964.943	6.582	-1005.661	-970.895	-893.364	116.661
	500.00	70.622	117.171	90.212	-958.046	13.479	-1016.631	-969.898	-874.091	91.316
	600.00	73.320	130.293	95.825	-950.844	20.681	-1029.020	-968.770	-855.035	74.437
	700.00	75.649	141.773	101.586	-943.394	28.131	-1042.635	-967.642	-836.169	62.396
	800.00	77.782	152.016	107.261	-935.721	35.804	-1057.333	-966.518	-817.464	53.375
	900.00	79.801	161.294	112.757	-927.841	43.684	-1073.006	-965.400	-798.899	46.367
	1000.00	81.749	169.804	118.042	-919.763	51.762	-1089.567	-964.291	-780.459	40.767
	1100.00	83.651	177.685	123.110	-911.493	60.032	-1106.946	-963.196	-762.128	36.190
	1200.00	85.521	185.044	127.968	-903.034	68.491	-1125.086	-962.122	-743.897	32.381
	1300.00	87.369	191.962	132.627	-894.389	77.136	-1143.940	-961.077	-725.754	29.161

References

Phase	H / S	C _p
SOL	Fi2/We1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	115.058	156.900	156.900	-1865.227	0.000	-1912.007	-1865.227	-1776.549	311.244
	300.00	115.309	157.613	156.902	-1865.014	0.213	-1912.298	-1865.202	-1775.999	309.229
	400.00	124.131	192.173	161.554	-1852.980	12.247	-1929.849	-1863.371	-1746.517	228.072
	500.00	128.505	220.385	170.588	-1840.329	24.898	-1950.521	-1860.992	-1717.572	179.434
	600.00	131.429	244.084	180.915	-1827.325	37.902	-1973.776	-1858.555	-1689.120	147.051
	700.00	133.876	264.531	191.433	-1814.058	51.169	-1999.230	-1856.306	-1661.061	123.950
	800.00	136.217	282.561	201.719	-1800.553	64.674	-2026.602	-1854.230	-1633.313	106.644
	900.00	138.601	298.742	211.615	-1786.813	78.414	-2055.681	-1852.311	-1605.815	93.199
	1000.00	141.084	313.472	221.075	-1772.830	92.397	-2086.302	-1850.535	-1578.523	82.454
	1100.00	143.675	327.040	230.099	-1758.593	106.634	-2118.336	-1848.894	-1551.403	73.670
	1200.00	146.361	339.656	238.709	-1744.092	121.135	-2151.678	-1847.387	-1524.425	66.357
	1300.00	149.114	351.479	246.934	-1729.318	135.909	-2186.241	-1846.022	-1497.568	60.173
	1400.00	151.902	362.632	254.803	-1714.268	150.959	-2221.952	-1844.827	-1470.810	54.877
	1500.00	154.684	373.207	262.347	-1698.938	166.289	-2258.748	-1843.829	-1444.131	50.289
	1600.00	157.420	383.278	269.593	-1683.332	181.895	-2296.576	-1851.515	-1417.274	46.269
	1700.00	160.066	392.901	276.566	-1667.457	197.770	-2335.389	-1870.940	-1389.296	42.688
	1800.00	162.576	402.122	283.287	-1651.324	213.903	-2375.143	-1869.677	-1361.000	39.495

References

Phase	H / S	C _p
SOL	Fi2/We1	Pa2

Phase	T [K]	C _p [————— J / (K mol) —————]	S —(G-H298)/T	—(G-H298)/T	H [————— kJ / mol —————]	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	34.316	267.132	267.132	157.737	0.000	78.092	157.737	109.504	-19.185
	300.00	34.351	267.345	267.133	157.801	0.064	77.597	157.705	109.205	-19.014
	400.00	35.603	277.424	268.499	161.307	3.570	50.338	153.757	93.388	-12.195
	500.00	36.190	285.438	271.113	164.900	7.163	22.181	150.606	78.640	-8.215
	600.00	36.516	292.068	274.069	168.537	10.800	-6.704	147.753	64.520	-5.617
	700.00	36.718	297.713	277.053	172.199	14.462	-36.200	145.038	50.862	-3.795
	800.00	36.855	302.626	279.950	175.878	18.141	-66.223	142.145	37.603	-2.455
	900.00	36.953	306.973	282.715	179.569	21.832	-96.707	86.273	25.871	-1.502
	1000.00	37.028	310.870	285.339	183.268	25.531	-127.602	84.630	19.247	-1.005
	1100.00	37.087	314.402	287.823	186.974	29.237	-158.869	82.827	12.794	-0.608
	1200.00	37.135	317.631	290.175	190.685	32.948	-190.472	80.854	6.514	-0.284
	1300.00	37.176	320.605	292.403	194.400	36.663	-222.386	78.699	0.405	-0.016
	1400.00	37.212	323.362	294.517	198.120	40.383	-254.586	76.342	-5.531	0.206
	1500.00	37.243	325.930	296.526	201.843	44.106	-287.052	73.766	-11.290	0.393
	1600.00	37.272	328.335	298.440	205.568	47.831	-319.767	66.728	-16.752	0.547
	1700.00	37.298	330.595	300.266	209.297	51.560	-352.714	53.703	-21.450	0.659
	1800.00	37.323	332.728	302.010	213.028	55.291	-385.882	50.909	-25.790	0.748
	1900.00	37.346	334.746	303.681	216.761	59.024	-419.256	48.113	-29.975	0.824
	2000.00	37.367	336.662	305.282	220.497	62.760	-452.827	45.316	-34.013	0.888

References

Phase	H / S	C _p
GAS	Mi1	Mi1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	35.241	277.718	277.718	205.016	0.000	122.214	205.016	156.669	-27.448
	300.00	35.267	277.936	277.718	205.081	0.065	121.700	204.981	156.369	-27.226
	400.00	36.166	288.223	279.115	208.659	3.643	93.370	203.018	140.458	-18.342
	500.00	36.586	296.344	281.777	212.299	7.283	64.127	195.006	125.143	-13.074
	600.00	36.817	303.036	284.779	215.970	10.954	34.149	192.249	111.427	-9.701
	700.00	36.959	308.723	287.804	219.660	14.644	3.553	189.356	98.183	-7.327
	800.00	37.054	313.665	290.734	223.361	18.345	-27.571	186.330	85.364	-5.574
	900.00	37.121	318.033	293.529	227.070	22.054	-59.160	183.168	72.931	-4.233
	1000.00	37.170	321.947	296.179	230.784	25.768	-91.163	179.861	60.859	-3.179
	1100.00	37.209	325.492	298.685	234.503	29.487	-123.538	123.088	54.079	-2.568
	1200.00	37.240	328.731	301.056	238.226	33.210	-156.251	120.907	47.900	-2.085
	1300.00	37.265	331.712	303.301	241.951	36.935	-189.275	118.560	41.911	-1.684
	1400.00	37.287	334.475	305.430	245.679	40.663	-222.586	116.025	36.108	-1.347
	1500.00	37.305	337.048	307.453	249.408	44.392	-256.164	113.289	30.494	-1.062
	1600.00	37.322	339.456	309.379	253.140	48.124	-289.990	106.105	25.188	-0.822
	1700.00	37.337	341.719	311.215	256.872	51.856	-324.050	92.951	20.654	-0.635
	1800.00	37.350	343.854	312.970	260.607	55.591	-358.330	90.043	16.486	-0.478
	1900.00	37.363	345.873	314.649	264.342	59.326	-392.817	87.150	12.478	-0.343
	2000.00	37.374	347.790	316.259	268.079	63.063	-427.501	84.270	8.623	-0.225

References

Phase	H / S	C _p
GAS	Mi1	Mi1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
GAS	298.15	36.255	286.379	286.379	268.613	0.000	183.229	268.613	219.842	–38.515
	300.00	36.269	286.603	286.379	268.680	0.067	182.699	268.579	219.540	–38.225
	400.00	36.759	297.114	287.809	272.335	3.722	153.489	266.676	203.476	–26.571
	500.00	36.987	305.344	290.523	276.024	7.411	123.352	264.616	187.911	–19.631
	600.00	37.111	312.100	293.573	279.729	11.116	92.469	262.281	172.783	–15.042
	700.00	37.187	317.827	296.639	283.444	14.831	60.966	259.580	158.076	–11.796
	800.00	37.237	322.796	299.605	287.166	18.553	28.929	238.899	145.659	–9.511
	900.00	37.272	327.184	302.430	290.891	22.278	–3.574	235.502	134.207	–7.789
	1000.00	37.297	331.112	305.105	294.620	26.007	–36.492	231.958	123.140	–6.432
	1100.00	37.316	334.668	307.634	298.350	29.737	–69.784	228.257	112.436	–5.339
	1200.00	37.331	337.915	310.024	302.083	33.470	–103.416	224.388	102.077	–4.443
	1300.00	37.343	340.904	312.286	305.817	37.204	–137.359	220.340	92.047	–3.698
	1400.00	37.353	343.672	314.430	309.551	40.938	–171.589	169.652	84.828	–3.165
	1500.00	37.362	346.249	316.466	313.287	44.674	–206.087	166.761	78.868	–2.746
	1600.00	37.369	348.661	318.404	317.024	48.411	–240.833	159.418	73.228	–2.391
	1700.00	37.375	350.926	320.251	320.761	52.148	–275.814	146.095	68.370	–2.101
	1800.00	37.380	353.063	322.015	324.499	55.886	–311.014	143.010	63.886	–1.854
	1900.00	37.385	355.084	323.703	328.237	59.624	–346.423	139.934	59.575	–1.638
	2000.00	37.390	357.002	325.320	331.976	63.363	–382.028	136.870	55.425	–1.448

References

Phase	H / S	C _p
GAS	Mi1	Mi1

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	24.252	33.472	33.472	0.000	0.000	-9.980	0.000	0.000	0.000
	300.00	24.267	33.622	33.472	0.045	0.045	-10.042	0.000	0.000	0.000
	400.00	25.104	40.718	34.434	2.513	2.513	-13.774	0.000	0.000	0.000
	500.00	25.941	46.410	36.278	5.066	5.066	-18.139	0.000	0.000	0.000
	600.00	26.778	51.213	38.377	7.702	7.702	-23.026	0.000	0.000	0.000
	700.00	27.614	55.404	40.516	10.421	10.421	-28.361	0.000	0.000	0.000
	800.00	28.451	59.146	42.615	13.224	13.224	-34.092	0.000	0.000	0.000
	900.00	29.288	62.545	44.644	16.111	16.111	-40.179	0.000	0.000	0.000
	1000.00	30.125	65.674	46.592	19.082	19.082	-46.592	0.000	0.000	0.000
	1100.00	30.962	68.585	48.461	22.136	22.136	-53.307	0.000	0.000	0.000
	1200.00	31.798	71.315	50.253	25.274	25.274	-60.303	0.000	0.000	0.000
	1300.00	32.635	73.893	51.973	28.496	28.496	-67.565	0.000	0.000	0.000
	1400.00	33.472	76.342	53.627	31.801	31.801	-75.077	0.000	0.000	0.000
	1500.00	34.309	78.680	55.220	35.190	35.190	-82.829	0.000	0.000	0.000
	1600.00	35.146	80.921	56.756	38.663	38.663	-90.810	0.000	0.000	0.000
	1700.00	35.982	83.077	58.242	42.220	42.220	-99.011	0.000	0.000	0.000
	1800.00	36.819	85.157	59.679	45.860	45.860	-107.423	0.000	0.000	0.000
	1900.00	37.656	87.170	61.074	49.583	49.583	-116.040	0.000	0.000	0.000
	2000.00	38.493	89.123	62.427	53.391	53.391	-124.855	0.000	0.000	0.000
	2100.00	39.330	91.021	63.744	57.282	57.282	-133.863	0.000	0.000	0.000
	2200.00	40.166	92.870	65.026	61.257	61.257	-143.058	0.000	0.000	0.000
	2300.00	41.003	94.674	66.276	65.315	65.315	-152.435	0.000	0.000	0.000
	2400.00	41.840	96.437	67.496	69.457	69.457	-161.991	0.000	0.000	0.000
	2473.00	42.451	97.700	68.369	72.534	72.534	-169.077	0.000	0.000	0.000
LIQ			9.644		23.849					
	2473.00	41.840	107.343	68.369	96.383	96.383	-169.077	0.000	0.000	0.000
	2500.00	41.840	107.798	68.793	97.513	97.513	-171.982	0.000	0.000	0.000
	2600.00	41.840	109.439	70.325	101.697	101.697	-182.844	0.000	0.000	0.000
	2700.00	41.840	111.018	71.803	105.881	105.881	-193.867	0.000	0.000	0.000
	2800.00	41.840	112.539	73.231	110.065	110.065	-205.046	0.000	0.000	0.000
	2900.00	41.840	114.008	74.611	114.249	114.249	-216.373	0.000	0.000	0.000
	3000.00	41.840	115.426	75.948	118.433	118.433	-227.845	0.000	0.000	0.000
	3100.00	41.840	116.798	77.244	122.617	122.617	-239.457	0.000	0.000	0.000
	3200.00	41.840	118.126	78.501	126.801	126.801	-251.204	0.000	0.000	0.000
	3300.00	41.840	119.414	79.721	130.985	130.985	-263.081	0.000	0.000	0.000
	3400.00	41.840	120.663	80.907	135.169	135.169	-275.085	0.000	0.000	0.000
	3500.00	41.840	121.876	82.061	139.353	139.353	-287.212	0.000	0.000	0.000
	3600.00	41.840	123.054	83.183	143.537	143.537	-299.459	0.000	0.000	0.000
	3700.00	41.840	124.201	84.276	147.721	147.721	-311.822	0.000	0.000	0.000
	3800.00	41.840	125.317	85.342	151.905	151.905	-324.298	0.000	0.000	0.000
	3900.00	41.840	126.403	86.381	156.089	156.089	-336.884	0.000	0.000	0.000
	4000.00	41.840	127.463	87.394	160.273	160.273	-349.578	0.000	0.000	0.000

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
LIQ	4100.00	41.840	128.496	88.384	164.457	164.457	-362.376	0.000	0.000	0.000
	4200.00	41.840	129.504	89.351	168.641	168.641	-375.276	0.000	0.000	0.000
	4300.00	41.840	130.489	90.297	172.825	172.825	-388.276	0.000	0.000	0.000
	4400.00	41.840	131.450	91.221	177.009	177.009	-401.373	0.000	0.000	0.000
	4500.00	41.840	132.391	92.126	181.193	181.193	-414.565	0.000	0.000	0.000
	4600.00	41.840	133.310	93.011	185.377	185.377	-427.851	0.000	0.000	0.000
	4700.00	41.840	134.210	93.878	189.561	189.561	-441.227	0.000	0.000	0.000
	4800.00	41.840	135.091	94.728	193.745	193.745	-454.692	0.000	0.000	0.000
	4900.00	41.840	135.954	95.560	197.929	197.929	-468.244	0.000	0.000	0.000
	4904.64	41.840	135.993	95.598	198.123	198.123	-468.875	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL	Sh1, Tk1	Sh1	
LIQ	Sh1, Tk1	Sh1	Tk1,e BPT= 4904.638, L= 592.879 kJ

Tc[g]

TECHNETIUM (GAS)

98.906

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[- -]
GAS	298.15	20.794	181.059	181.059	656.888	0.000	602.905	656.888	612.885	-107.375
	300.00	20.800	181.188	181.059	656.926	0.038	602.570	656.882	612.612	-106.665
	400.00	20.916	187.188	181.877	659.012	2.124	584.137	656.499	597.911	-78.079
	500.00	21.364	191.894	183.426	661.122	4.234	565.175	656.056	583.314	-60.938
	600.00	22.292	195.864	185.175	663.301	6.413	545.783	655.600	568.809	-49.519
	700.00	23.641	199.397	186.959	665.595	8.707	526.017	655.173	554.378	-41.368
	800.00	25.355	202.662	188.720	668.042	11.154	505.912	654.817	540.004	-35.259
	900.00	27.057	205.744	190.442	670.661	13.773	485.491	654.549	525.670	-30.509
	1000.00	28.714	208.683	192.120	673.451	16.563	464.768	654.369	511.360	-26.711
	1100.00	30.071	211.486	193.754	676.393	19.505	443.758	654.257	497.065	-23.604
	1200.00	31.066	214.148	195.344	679.453	22.565	422.476	654.179	482.779	-21.015
	1300.00	31.713	216.662	196.888	682.595	25.707	400.934	654.099	468.498	-18.824
	1400.00	32.055	219.027	198.386	685.785	28.897	379.148	653.984	454.226	-16.947
	1500.00	32.146	221.243	199.836	688.997	32.109	357.133	653.807	439.963	-15.321
	1600.00	32.040	223.315	201.240	692.208	35.320	334.904	653.545	425.715	-13.898
	1700.00	31.790	225.250	202.596	695.400	38.512	312.475	653.181	411.486	-12.643
	1800.00	31.448	227.058	203.905	698.563	41.675	289.859	652.703	397.282	-11.529
	1900.00	31.061	228.748	205.169	701.688	44.800	267.067	652.105	383.107	-10.532
	2000.00	30.678	230.331	206.388	704.775	47.887	244.113	651.384	368.968	-9.636
	2100.00	30.301	231.819	207.564	707.824	50.936	221.004	650.542	354.867	-8.827
	2200.00	29.945	233.220	208.698	710.836	53.948	197.752	649.579	340.809	-8.092
	2300.00	29.625	234.544	209.794	713.814	56.926	174.363	648.499	326.798	-7.422
	2400.00	29.349	235.799	210.851	716.763	59.875	150.845	647.305	312.836	-6.809
	2500.00	29.123	236.992	211.873	719.686	62.798	127.205	622.173	299.187	-6.251
	2600.00	28.945	238.131	212.861	722.589	65.701	103.449	620.892	286.292	-5.752
	2700.00	28.815	239.221	213.818	725.476	68.588	79.581	619.596	273.448	-5.290
	2800.00	28.729	240.267	214.744	728.353	71.465	55.606	618.288	260.651	-4.863
	2900.00	28.685	241.274	215.641	731.223	74.335	31.529	616.975	247.902	-4.465
	3000.00	28.678	242.246	216.512	734.091	77.203	7.352	615.659	235.198	-4.095
	3100.00	28.705	243.187	217.357	736.960	80.072	-16.920	614.343	222.537	-3.750
	3200.00	28.762	244.099	218.179	739.833	82.945	-41.284	613.033	209.919	-3.427
	3300.00	28.846	244.986	218.978	742.714	85.826	-65.739	611.729	197.342	-3.124
	3400.00	28.951	245.848	219.755	745.603	88.715	-90.281	610.435	184.804	-2.839
	3500.00	29.076	246.689	220.513	748.504	91.616	-114.908	609.152	172.305	-2.572
	3600.00	29.217	247.510	221.252	751.419	94.531	-139.618	607.882	159.841	-2.319
	3700.00	29.372	248.313	221.972	754.348	97.460	-164.409	606.628	147.413	-2.081
	3800.00	29.536	249.098	222.676	757.294	100.406	-189.280	605.389	135.018	-1.856
	3900.00	29.709	249.868	223.363	760.256	103.368	-214.228	604.167	122.656	-1.643
	4000.00	29.887	250.622	224.035	763.236	106.348	-239.253	602.963	110.325	-1.441
	4100.00	30.069	251.362	224.693	766.233	109.345	-264.352	601.777	98.024	-1.249
	4200.00	30.252	252.089	225.336	769.249	112.361	-289.525	600.609	85.751	-1.066
	4300.00	30.434	252.803	225.967	772.284	115.396	-314.769	599.459	73.507	-0.893
	4400.00	30.615	253.505	226.585	775.336	118.448	-340.085	598.328	61.288	-0.728
	4500.00	30.792	254.195	227.191	778.407	121.519	-365.470	597.214	49.095	-0.570
	4600.00	30.963	254.873	227.785	781.494	124.606	-390.924	596.118	36.927	-0.419
	4700.00	31.128	255.541	228.369	784.599	127.711	-416.444	595.038	24.782	-0.275
	4800.00	31.285	256.198	228.942	787.720	130.832	-442.031	593.975	12.661	-0.138
	4900.00	31.433	256.845	229.504	790.856	133.968	-467.684	592.927	0.561	-0.006
	5000.00	31.571	257.481	230.058	794.006	137.118	-493.400	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Tk1	Hu1,e

130.905

TECHNETIUM DIOXIDE

TcO₂

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	55.669	54.392	54.392	-433.044	0.000	-449.261	-433.044	-378.117	66.244
	300.00	55.891	54.737	54.393	-432.941	0.103	-449.362	-433.040	-377.776	65.777
	400.00	64.120	72.089	56.703	-426.890	6.154	-455.725	-432.429	-359.428	46.937
	500.00	68.546	86.913	61.301	-420.238	12.806	-463.695	-431.388	-341.293	35.655
	600.00	71.477	99.684	66.659	-413.229	19.815	-473.039	-430.174	-323.387	28.153
	700.00	73.700	110.876	72.193	-405.966	27.078	-483.579	-428.886	-305.690	22.811
	800.00	75.547	120.841	77.662	-398.501	34.543	-495.174	-427.561	-288.181	18.816
	900.00	77.175	129.834	82.968	-390.864	42.180	-507.715	-426.216	-270.839	15.719
	1000.00	78.668	138.044	88.071	-383.071	49.973	-521.115	-424.856	-253.647	13.249
	1100.00	80.071	145.608	92.962	-375.133	57.911	-535.302	-423.482	-236.593	11.235
	1200.00	81.414	152.633	97.645	-367.058	65.986	-550.218	-422.094	-219.664	9.562

References

Phase	H / S	C _p
SOL	Ku1/Tk1	e

146.905

TECHNETIUM TRIOXIDE

TcO₃

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	107.947	77.404	77.404	-539.736	0.000	-562.814	-539.736	-461.087	80.781
	300.00	108.152	78.072	77.406	-539.536	0.200	-562.958	-539.663	-460.600	80.198
	400.00	119.244	110.705	81.781	-528.166	11.570	-572.448	-535.218	-434.890	56.791

References

Phase	H / S	C _p
SOL	Ku1/Tk1	e

Tc207

DITECHNETIUM HEPTAOXIDE

309.808

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
SOL	298.15	238.489	191.627	191.627	-1114.618	0.000	-1171.752	-1114.618	-937.716	164.284
	300.00	238.984	193.104	191.632	-1114.176	0.442	-1172.108	-1114.456	-936.619	163.080
	393.00	263.861	260.844	200.223	-1090.794	23.824	-1193.306	-1105.322	-882.728	117.326
			6.000		47.446					
LIQ	393.00	251.040	266.844	85.494	-1043.348	71.270	-1148.217	-1057.876	-837.640	111.333
	400.00	251.040	271.276	88.707	-1041.590	73.028	-1150.101	-1057.206	-833.723	108.873
	500.00	251.040	327.294	131.030	-1016.486	98.132	-1180.133	-1047.913	-778.938	81.375
	584.00	251.040	366.279	162.136	-995.399	119.219	-1209.306	-1040.508	-734.345	65.682

References

Phase	H / S	C _p	Remarks
SOL	Tk1	e	
LIQ	Tk1	e	Tk1 BPT= 584., L= 58.79 kJ

Tc207[g]

DITECHNETIUM HEPTAOXIDE (GAS)

309.808

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
GAS	298.15	147.418	474.683	474.683	-982.403	0.000	-1123.930	-982.403	-889.895	155.906
	300.00	147.733	475.596	474.686	-982.130	0.273	-1124.809	-982.410	-889.321	154.844
	400.00	158.931	519.853	480.644	-966.720	15.684	-1174.661	-982.336	-858.283	112.080
	500.00	164.298	555.957	492.210	-950.530	31.873	-1228.508	-981.957	-827.313	86.429
	600.00	167.353	586.205	505.424	-933.935	48.468	-1285.658	-981.692	-796.413	69.334
	700.00	169.301	612.159	518.862	-917.096	65.307	-1345.607	-981.683	-765.538	57.125
	800.00	170.644	634.858	531.973	-900.095	82.308	-1407.981	-981.968	-734.644	47.967
	900.00	171.624	655.017	544.545	-882.979	99.424	-1472.494	-982.545	-703.697	40.841
	1000.00	172.367	673.139	556.514	-865.778	116.625	-1538.917	-983.402	-672.670	35.137
	1100.00	172.945	689.596	567.876	-848.511	133.892	-1607.066	-984.526	-641.545	30.464
	1200.00	173.401	704.664	578.656	-831.193	151.210	-1676.790	-985.905	-610.305	26.566
	1300.00	173.763	718.559	588.890	-813.834	168.569	-1747.960	-987.530	-578.941	23.262
	1400.00	174.047	731.447	598.618	-796.443	185.960	-1820.468	-989.396	-547.443	20.425
	1500.00	174.268	743.463	607.878	-779.027	203.377	-1894.221	-991.502	-515.803	17.962
	1600.00	174.432	754.715	616.708	-761.591	220.812	-1969.135	-993.847	-484.014	15.801
	1700.00	174.546	765.294	625.140	-744.142	238.261	-2045.141	-996.432	-452.072	13.890
	1800.00	174.614	775.273	633.206	-726.683	255.720	-2122.174	-999.260	-419.970	12.187
	1900.00	174.641	784.714	640.934	-709.220	273.183	-2200.178	-1002.332	-387.705	10.659
	2000.00	174.627	793.672	648.349	-691.757	290.647	-2279.101	-1005.653	-355.271	9.279

References

Phase	H / S	C _p
GAS	Tk1/e	e

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	25.707	49.497	49.497	0.000	0.000	-14.757	0.000	0.000	0.000
	300.00	25.748	49.656	49.497	0.048	0.048	-14.849	0.000	0.000	0.000
	400.00	27.957	57.366	50.534	2.733	2.733	-20.213	0.000	0.000	0.000
	500.00	30.167	63.842	52.563	5.639	5.639	-26.282	0.000	0.000	0.000
	600.00	32.376	69.537	54.927	8.766	8.766	-32.956	0.000	0.000	0.000
	700.00	34.585	74.694	57.387	12.114	12.114	-40.171	0.000	0.000	0.000
	722.65	35.085	75.803	57.947	12.903	12.903	-41.876	0.000	0.000	0.000
LIQ			24.201		17.489					
	722.65	37.656	100.004	57.947	30.392	30.392	-41.876	0.000	0.000	0.000
	800.00	37.656	103.833	62.202	33.305	33.305	-49.762	0.000	0.000	0.000
	900.00	37.656	108.268	67.079	37.071	37.071	-60.371	0.000	0.000	0.000
	1000.00	37.656	112.236	71.400	40.836	40.836	-71.400	0.000	0.000	0.000
	1100.00	37.656	115.825	75.278	44.602	44.602	-82.806	0.000	0.000	0.000
	1200.00	37.656	119.101	78.795	48.367	48.367	-94.554	0.000	0.000	0.000
	1300.00	37.656	122.115	82.013	52.133	52.133	-106.617	0.000	0.000	0.000
	1327.00	37.656	122.889	82.837	53.150	53.150	-109.925	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL	Hu1,Mi1	Hu1,Mi1	
LIQ	Hu1	Hu1	e/Hu1 BPT=1327.GAS(Te2),L=47.582kJ / NBPT=1261.REAL GAS(Te2+Te)

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]		[—————]	[—————]	kJ / mol				[-]
GAS	298.15	20.810	182.699	182.699	211.710	0.000	157.238	211.710	171.996	-30.133
	300.00	20.803	182.828	182.700	211.748	0.038	156.900	211.701	171.749	-29.904
	400.00	20.621	188.780	183.512	213.817	2.107	138.305	211.084	158.518	-20.700
	500.00	20.635	193.381	185.043	215.879	4.169	119.188	210.240	145.470	-15.197
	600.00	20.728	197.151	186.756	217.947	6.237	99.656	209.180	132.612	-11.545
	700.00	20.856	200.355	188.476	220.026	8.316	79.777	207.911	119.948	-8.951
	800.00	21.004	203.150	190.139	222.119	10.409	59.599	188.814	109.360	-7.141
	900.00	21.164	205.633	191.725	224.227	12.517	39.158	187.156	99.528	-5.776
	1000.00	21.330	207.871	193.229	226.351	14.641	18.481	185.515	89.880	-4.695
	1100.00	21.501	209.912	194.655	228.493	16.783	-2.410	183.891	80.395	-3.818
	1200.00	21.675	211.790	196.005	230.652	18.942	-23.496	182.284	71.058	-3.093
	1300.00	21.852	213.532	197.287	232.828	21.118	-44.764	180.695	61.853	-2.485
	1400.00	22.030	215.158	198.506	235.022	23.312	-66.199	132.684	55.262	-2.062
	1500.00	22.209	216.684	199.668	237.234	25.524	-87.792	132.705	49.731	-1.732
	1600.00	22.389	218.123	200.777	239.464	27.754	-109.533	132.751	44.199	-1.443
	1700.00	22.569	219.486	201.838	241.712	30.002	-131.414	132.819	38.662	-1.188
	1800.00	22.751	220.781	202.854	243.978	32.268	-153.428	132.911	33.121	-0.961
	1900.00	22.932	222.016	203.831	246.262	34.552	-175.568	133.029	27.574	-0.758
	2000.00	23.115	223.197	204.770	248.564	36.854	-197.829	133.177	22.020	-0.575

References

Phase	H / S	C _p
GAS	Mi1	Mi1

255.200

TELLURIUM (GAS)

Te₂[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H ₂₉₈)/T [—————]	H [—————]	H-H ₂₉₈ kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	36.329	258.974	258.974	160.373	0.000	83.160	160.373	112.675	-19.740
	300.00	36.344	259.198	258.974	160.440	0.067	82.681	160.345	112.379	-19.567
	400.00	37.130	269.764	260.409	164.115	3.742	56.209	158.649	96.636	-12.619
	500.00	37.849	278.127	263.145	167.864	7.491	28.800	156.586	81.364	-8.500
	600.00	38.542	285.089	266.238	171.684	11.311	0.630	154.151	66.542	-5.793
	700.00	39.222	291.082	269.369	175.572	15.199	-28.185	151.343	52.157	-3.892
	800.00	39.896	296.363	272.420	179.528	19.155	-57.563	112.918	41.960	-2.740
	900.00	40.565	301.101	275.348	183.551	23.178	-87.440	109.410	33.302	-1.933
	1000.00	41.233	305.410	278.142	187.641	27.268	-117.769	105.969	25.031	-1.307
	1100.00	41.899	309.371	280.803	191.798	31.425	-148.510	102.594	17.101	-0.812
	1200.00	42.564	313.045	283.338	196.021	35.648	-179.633	99.286	9.475	-0.412
	1300.00	43.228	316.478	285.757	200.310	39.937	-211.111	96.044	2.123	-0.085
	1400.00	43.878	319.713	288.068	204.676	44.303	-242.922	0.000	0.000	0.000
	1500.00	43.749	322.737	290.280	209.059	48.686	-275.047	0.000	0.000	0.000
	1600.00	43.618	325.556	292.397	213.427	53.054	-307.463	0.000	0.000	0.000
	1700.00	43.545	328.198	294.426	217.785	57.412	-340.152	0.000	0.000	0.000
	1800.00	43.419	330.684	296.372	222.134	61.761	-373.097	0.000	0.000	0.000
	1900.00	43.200	333.026	298.240	226.465	66.092	-406.284	0.000	0.000	0.000
	2000.00	43.016	335.236	300.036	230.775	70.402	-439.698	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Mi1	Mi1

447.216

TELLURIUM TETRABROMIDE

TeBr₄

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H ₂₉₈)/T [—————]	H [—————]	H-H ₂₉₈ kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	129.551	243.509	243.509	-190.372	0.000	-262.974	-190.372	-157.454	27.585
	300.00	129.662	244.311	243.511	-190.132	0.240	-263.425	-190.460	-157.250	27.380
	388.00	134.927	278.311	247.688	-178.490	11.882	-286.475	-249.252	-137.445	18.504

References

Phase	H / S	C _p	Remarks
SOL	Mi1/e	e	Mi1 MPT= 388., DEC., TeBr ₄ (s) = TeBr ₂ (g) + Br ₂ (g)

TeCl2[g]

TELLURIUM DICHLORIDE (GAS)

198.505

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	54.346	305.663	305.663	-112.968	0.000	-204.101	-112.968	-122.822	21.518
	300.00	54.392	305.999	305.664	-112.867	0.101	-204.667	-112.978	-122.883	21.396
	400.00	56.004	321.901	307.821	-107.336	5.632	-236.096	-113.599	-126.096	16.466
	500.00	56.755	334.487	311.940	-101.694	11.274	-268.938	-114.434	-129.128	13.490
	600.00	57.167	344.875	316.588	-95.996	16.972	-302.921	-115.498	-131.971	11.489
	700.00	57.419	353.708	321.276	-90.266	22.702	-337.861	-116.793	-134.618	10.045
	800.00	57.586	361.387	325.820	-84.515	28.453	-373.624	-135.938	-135.183	8.827
	900.00	57.704	368.176	330.157	-78.750	34.218	-410.109	-137.665	-134.985	7.834
	1000.00	57.790	374.261	334.268	-72.975	39.993	-447.236	-139.397	-134.594	7.030
	1100.00	57.857	379.772	338.158	-67.193	45.775	-484.942	-141.133	-134.030	6.365
	1200.00	57.909	384.809	341.839	-61.404	51.564	-523.175	-142.874	-133.307	5.803
	1300.00	57.952	389.446	345.325	-55.611	57.357	-561.890	-144.620	-132.439	5.321
	1400.00	57.989	393.742	348.632	-49.814	63.154	-601.052	-192.809	-128.945	4.811
	1500.00	58.019	397.743	351.774	-44.014	68.954	-640.629	-192.989	-124.377	4.331
	1600.00	58.046	401.489	354.765	-38.210	74.758	-680.593	-193.165	-119.797	3.911
	1700.00	58.070	405.009	357.618	-32.405	80.563	-720.919	-193.342	-115.207	3.540
	1800.00	58.092	408.328	360.344	-26.596	86.372	-761.588	-193.518	-110.605	3.210
	1900.00	58.111	411.470	362.953	-20.786	92.182	-802.579	-193.691	-105.994	2.914
	2000.00	58.130	414.451	365.454	-14.974	97.994	-843.876	-193.859	-101.374	2.648

References

Phase	H / S	C _p	Remarks
GAS	Mi1	Mi1	Mi1 MPT= 488., L= 11.322 kJ

TeCl4

TELLURIUM TETRACHLORIDE

269.411

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	138.490	200.832	200.832	-323.842	0.000	-383.720	-323.842	-235.918	41.332
	300.00	138.490	201.689	200.835	-323.586	0.256	-384.092	-323.759	-235.373	40.982
	400.00	138.490	241.530	206.267	-309.737	14.105	-406.349	-319.530	-206.562	26.974
	497.00	138.490	271.600	216.190	-296.303	27.539	-431.288	-315.837	-179.589	18.875
			37.968		18.870					
LIQ	497.00	230.120	309.567	216.190	-277.433	46.409	-431.288	-296.967	-179.589	18.875
	500.00	230.120	310.952	216.754	-276.743	47.099	-432.219	-296.584	-178.882	18.688
	600.00	230.120	352.908	236.056	-253.731	70.111	-465.476	-283.969	-156.532	13.627
	700.00	230.120	388.381	255.348	-230.719	93.123	-502.586	-271.659	-136.270	10.169

References

Phase	H / S	C _p	Remarks
SOL	Mi1	Mi1	
LIQ	Mi1	Mi1	Mi1 NBPT= 700.

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	90.579	396.276	396.276	-207.054	0.000	-325.204	-207.054	-177.402	31.080
	300.00	90.656	396.836	396.277	-206.886	0.168	-325.937	-207.060	-177.218	30.856
	400.00	93.342	423.339	399.873	-197.667	9.387	-367.003	-207.460	-167.216	21.836
	500.00	94.593	444.317	406.737	-188.264	18.790	-410.423	-208.105	-157.086	16.411
	600.00	95.280	461.630	414.485	-178.767	28.287	-455.745	-209.006	-146.802	12.780
	700.00	95.700	476.352	422.298	-169.217	37.837	-502.663	-210.157	-136.347	10.174
	800.00	95.979	489.150	429.872	-159.632	47.422	-550.952	-229.173	-123.830	8.085
	900.00	96.174	500.467	437.099	-150.024	57.030	-600.443	-230.782	-110.566	6.417
	1000.00	96.319	510.607	443.952	-140.399	66.655	-651.006	-232.405	-97.121	5.073
	1100.00	96.429	519.793	450.436	-130.761	76.293	-702.533	-234.040	-83.514	3.966
	1200.00	96.517	528.187	456.570	-121.113	85.941	-754.938	-235.686	-69.757	3.036
	1300.00	96.589	535.916	462.380	-111.458	95.596	-808.148	-237.342	-55.863	2.245
	1400.00	96.650	543.076	467.892	-101.796	105.258	-862.102	-238.447	-39.349	1.468
	1500.00	96.701	549.746	473.129	-92.128	114.926	-916.747	-238.549	-21.767	0.758
	1600.00	96.746	555.988	478.115	-82.456	124.598	-972.037	-238.652	-4.178	0.136
	1700.00	96.786	561.855	482.870	-72.779	134.275	-1027.932	-238.761	13.417	-0.412
	1800.00	96.822	567.388	487.413	-63.099	143.955	-1084.397	-238.876	31.019	-0.900
	1900.00	96.855	572.624	491.761	-53.415	153.639	-1141.400	-238.992	48.627	-1.337
	2000.00	96.885	577.593	495.929	-43.728	163.326	-1198.913	-238.110	66.242	-1.730

References

Phase	H / S	C _p
GAS	Mi1,e	Mi1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[—————]	J / (K mol)	—————]	[—————]	kJ / mol	—————]	—————]	—————]	[-]
GAS	298.15	0.315	241.359	241.359	-87.027	0.000	-158.988	-87.027	-113.999	19.972
	300.00	0.765	241.362	241.359	-87.026	0.001	-159.435	-87.103	-114.166	19.878
	400.00	16.584	244.074	241.621	-86.046	0.981	-183.675	-90.414	-122.653	16.017
	500.00	23.926	248.654	242.559	-83.980	3.047	-208.307	-92.936	-130.412	13.624
	600.00	27.931	253.403	243.973	-81.369	5.658	-233.411	-95.189	-137.693	11.987
	700.00	30.361	257.905	245.645	-78.445	8.582	-258.979	-97.388	-144.604	10.790
	800.00	31.952	262.070	247.442	-75.324	11.703	-284.980	-117.261	-149.316	9.749
	900.00	33.054	265.901	249.283	-72.071	14.956	-311.382	-119.597	-153.182	8.890
	1000.00	33.853	269.427	251.124	-68.723	18.304	-338.151	-121.856	-156.792	8.190
	1100.00	34.454	272.683	252.937	-65.307	21.720	-365.258	-124.058	-160.178	7.606
	1200.00	34.920	275.702	254.710	-61.837	25.190	-392.679	-126.218	-163.366	7.111
	1300.00	35.292	278.512	256.434	-58.326	28.701	-420.392	-128.345	-166.376	6.685
	1400.00	35.594	281.139	258.106	-54.781	32.246	-448.376	-176.887	-166.731	6.221
	1500.00	35.845	283.604	259.725	-51.209	35.818	-476.614	-177.395	-165.987	5.780
	1600.00	36.057	285.924	261.290	-47.613	39.414	-505.091	-177.878	-165.211	5.394
	1700.00	36.240	288.115	262.804	-43.998	43.029	-533.794	-178.343	-164.405	5.052
	1800.00	36.399	290.191	264.269	-40.366	46.661	-562.711	-178.792	-163.572	4.747
	1900.00	36.539	292.163	265.685	-36.719	50.308	-591.829	-179.222	-162.715	4.473
	2000.00	36.664	294.041	267.057	-33.059	53.968	-621.140	-179.632	-161.835	4.227

References

Phase	H / S	C _p
GAS	Mi1	Mi1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [—]
GAS	298.15	45.908	275.207	275.207	-384.928	0.000	-466.981	-384.928	-391.760	68.635
	300.00	46.040	275.492	275.208	-384.843	0.085	-467.490	-384.948	-391.803	68.219
	400.00	50.717	289.471	277.083	-379.972	4.956	-495.761	-385.977	-393.930	51.442
	500.00	52.939	301.053	280.753	-374.778	10.150	-525.305	-387.052	-395.797	41.349
	600.00	54.195	310.826	284.973	-369.416	15.512	-555.912	-388.290	-397.433	34.600
	700.00	54.994	319.244	289.281	-363.954	20.974	-587.425	-389.726	-398.846	29.762
	800.00	55.551	326.626	293.497	-358.425	26.503	-619.726	-408.994	-398.159	25.997
	900.00	55.966	333.194	297.550	-352.848	32.080	-652.723	-410.831	-396.694	23.024
	1000.00	56.293	339.108	301.415	-347.235	37.693	-686.343	-412.663	-395.025	20.634
	1100.00	56.563	344.486	305.090	-341.592	43.336	-720.527	-414.492	-393.173	18.670
	1200.00	56.793	349.418	308.581	-335.924	49.004	-755.225	-416.318	-391.154	17.026
	1300.00	56.997	353.972	311.900	-330.234	54.694	-790.398	-418.140	-388.983	15.630
	1400.00	57.180	358.203	315.058	-324.525	60.403	-826.009	-466.399	-384.181	14.334
	1500.00	57.349	362.154	318.067	-318.799	66.129	-862.029	-466.641	-378.299	13.174
	1600.00	57.506	365.860	320.940	-313.056	71.872	-898.432	-466.872	-372.402	12.158
	1700.00	57.654	369.351	323.686	-307.298	77.630	-935.194	-467.094	-366.491	11.261
	1800.00	57.796	372.650	326.315	-301.525	83.403	-972.295	-467.309	-360.567	10.463
	1900.00	57.933	375.779	328.837	-295.739	89.189	-1009.718	-467.511	-354.631	9.749
	2000.00	58.065	378.754	331.259	-289.939	94.989	-1047.446	-467.698	-348.685	9.107

References

Phase	H / S	C _p
GAS	Mi1	Mi1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]		[—————]		[————— kJ / mol —————]				[-]
GAS	298.15	85.065	324.202	324.202	-948.094	0.000	-1044.755	-948.094	-909.071	159.265
	300.00	85.311	324.729	324.204	-947.936	0.158	-1045.355	-948.100	-908.829	158.241
	400.00	94.029	350.641	327.677	-938.909	9.185	-1079.165	-948.185	-895.717	116.969
	500.00	98.175	372.117	334.482	-929.277	18.817	-1115.335	-948.185	-882.601	92.205
	600.00	100.522	390.242	342.305	-919.332	28.762	-1153.477	-948.314	-869.475	75.695
	700.00	102.020	405.857	350.294	-909.200	38.894	-1193.300	-948.630	-856.313	63.899
	800.00	103.065	419.552	358.113	-898.943	49.151	-1234.585	-966.776	-841.212	54.925
	900.00	103.846	431.739	365.629	-888.596	59.498	-1277.160	-967.490	-825.473	47.909
	1000.00	104.464	442.713	372.798	-878.179	69.915	-1320.892	-968.199	-809.656	42.292
	1100.00	104.976	452.694	379.614	-867.706	80.388	-1365.670	-968.905	-793.767	37.693
	1200.00	105.414	461.848	386.091	-857.186	90.908	-1411.403	-969.607	-777.814	33.857
	1300.00	105.802	470.301	392.248	-846.625	101.469	-1458.016	-970.305	-761.803	30.610
	1400.00	106.152	478.155	398.107	-836.027	112.067	-1505.443	-1017.437	-743.248	27.731
	1500.00	106.475	485.489	403.690	-825.396	122.698	-1553.630	-1016.551	-723.693	25.201
	1600.00	106.776	492.371	409.020	-814.733	133.361	-1602.526	-1015.652	-704.199	22.990
	1700.00	107.062	498.853	414.116	-804.041	144.053	-1652.091	-1014.742	-684.761	21.040
	1800.00	107.335	504.980	418.995	-793.321	154.773	-1702.285	-1013.822	-665.377	19.309
	1900.00	107.598	510.790	423.675	-782.574	165.520	-1753.076	-1012.887	-646.044	17.761
	2000.00	107.853	516.316	428.170	-771.802	176.292	-1804.434	-1011.934	-626.761	16.369

References

Phase	H / S	C _p	Remarks
GAS	Mi1	Mi1	Mi1 MPT= 403., L= 26.57 kJ

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	100.585	340.896	340.896	-1159.805	0.000	-1261.443	-1159.805	-1095.527	191.932
	300.00	100.939	341.519	340.898	-1159.619	0.186	-1262.074	-1159.811	-1095.129	190.679
	400.00	113.492	372.531	345.041	-1148.809	10.996	-1297.821	-1159.721	-1073.564	140.193
	500.00	119.434	398.565	353.217	-1137.131	22.674	-1336.414	-1159.357	-1052.066	109.909
	600.00	122.775	420.661	362.664	-1125.007	34.798	-1377.403	-1159.042	-1030.640	89.725
	700.00	124.888	439.757	372.344	-1112.616	47.189	-1420.446	-1158.875	-1009.255	75.312
	800.00	126.346	456.534	381.841	-1100.051	59.754	-1465.278	-1176.515	-986.002	64.379
	900.00	127.424	471.480	390.985	-1087.360	72.445	-1511.692	-1176.709	-962.176	55.843
	1000.00	128.265	484.951	399.720	-1074.574	85.231	-1559.525	-1176.890	-938.329	49.013
	1100.00	128.951	497.209	408.033	-1061.712	98.093	-1608.642	-1177.060	-914.465	43.424
	1200.00	129.533	508.455	415.940	-1048.787	111.018	-1658.933	-1177.221	-890.585	38.766
	1300.00	130.040	518.843	423.461	-1035.808	123.997	-1710.304	-1177.374	-866.693	34.824
	1400.00	130.494	528.497	430.623	-1022.781	137.024	-1762.677	-1223.959	-840.297	31.352
	1500.00	130.907	537.515	437.452	-1009.710	150.095	-1815.982	-1222.522	-812.943	28.309
	1600.00	131.291	545.976	443.973	-996.600	163.205	-1870.161	-1221.070	-785.685	25.650
	1700.00	131.651	553.946	450.210	-983.453	176.352	-1925.161	-1219.606	-758.518	23.306
	1800.00	131.993	561.481	456.184	-970.271	189.534	-1980.936	-1218.130	-731.438	21.226
	1900.00	132.320	568.626	461.915	-957.055	202.750	-2037.444	-1216.637	-704.440	19.366
	2000.00	132.636	575.421	467.422	-943.807	215.998	-2094.650	-1215.125	-677.521	17.695

References

Phase	H / S	C _p	Remarks
GAS	Mi1	Mi1	Mi1 Te2F10: MPT= 240., NBPT= 326.

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					
GAS	298.15	117.323	336.001	336.001	-1369.005	0.000	-1469.184	-1369.005	-1273.036	223.031
	300.00	117.767	336.728	336.003	-1368.788	0.217	-1469.806	-1369.009	-1272.441	221.552
	400.00	133.494	373.079	340.853	-1356.114	12.891	-1505.346	-1368.662	-1240.280	161.964
	500.00	140.940	403.756	350.452	-1342.353	26.652	-1544.231	-1367.896	-1208.271	126.227
	600.00	145.126	429.855	361.566	-1328.032	40.973	-1585.945	-1367.121	-1176.420	102.416
	700.00	147.774	452.439	372.972	-1313.378	55.627	-1630.085	-1366.466	-1144.690	85.418
	800.00	149.601	472.297	384.171	-1298.504	70.501	-1676.342	-1383.601	-1111.163	72.552
	900.00	150.951	489.999	394.964	-1283.474	85.531	-1724.473	-1383.279	-1077.128	62.515
	1000.00	152.005	505.960	405.279	-1268.324	100.681	-1774.284	-1382.936	-1043.129	54.487
	1100.00	152.865	520.489	415.102	-1253.079	115.926	-1825.617	-1382.576	-1009.166	47.921
	1200.00	153.594	533.822	424.447	-1237.755	131.250	-1878.342	-1382.202	-975.236	42.451
	1300.00	154.230	546.142	433.341	-1222.363	146.642	-1932.348	-1381.816	-941.337	37.823
	1400.00	154.798	557.593	441.812	-1206.912	162.093	-1987.541	-1427.858	-904.978	33.765
	1500.00	155.317	568.291	449.891	-1191.405	177.600	-2043.841	-1425.874	-867.699	30.216
	1600.00	155.798	578.330	457.608	-1175.849	193.156	-2101.178	-1423.871	-830.552	27.115
	1700.00	156.249	587.789	464.990	-1160.247	208.758	-2159.488	-1421.853	-793.531	24.382
	1800.00	156.678	596.732	472.063	-1144.600	224.405	-2218.718	-1419.818	-756.630	21.957
	1900.00	157.088	605.214	478.850	-1128.912	240.093	-2278.819	-1417.764	-719.842	19.790
	2000.00	157.484	613.282	485.371	-1113.183	255.822	-2339.747	-1415.688	-683.163	17.842

References

Phase	H / S	C _p	Remarks
GAS	Mi1	Mi1	Mi1 MPT= 235., L= 7.95 kJ

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	31.806	240.689	240.689	74.475	0.000	2.713	74.475	48.053	-8.419
	300.00	31.856	240.886	240.690	74.534	0.059	2.268	74.459	47.889	-8.338
	400.00	33.678	250.335	241.966	77.823	3.348	-22.311	73.577	39.164	-5.114
	500.00	34.593	257.958	244.427	81.241	6.766	-47.738	72.559	30.674	-3.205
	600.00	35.152	264.318	247.227	84.730	10.255	-73.861	71.342	22.408	-1.951
	700.00	35.541	269.768	250.067	88.265	13.790	-100.572	69.902	14.363	-1.072
	800.00	35.841	274.534	252.834	91.835	17.360	-127.792	50.612	8.420	-0.550
	900.00	36.089	278.770	255.484	95.432	20.957	-155.461	48.741	3.258	-0.189
	1000.00	36.305	282.584	258.007	99.052	24.577	-183.532	46.864	-1.695	0.089
	1100.00	36.499	286.053	260.401	102.692	28.217	-211.966	44.984	-6.460	0.307
	1200.00	36.678	289.237	262.673	106.351	31.876	-240.733	43.103	-11.053	0.481
	1300.00	36.848	292.179	264.831	110.028	35.553	-269.806	41.223	-15.490	0.622
	1400.00	37.010	294.916	266.884	113.720	39.245	-299.162	-7.096	-17.291	0.645
	1500.00	37.167	297.475	268.839	117.429	42.954	-328.783	-7.399	-18.008	0.627
	1600.00	37.320	299.878	270.704	121.154	46.679	-358.652	-7.692	-18.706	0.611
	1700.00	37.469	302.145	272.488	124.893	50.418	-388.754	-7.978	-19.386	0.596
	1800.00	37.616	304.291	274.195	128.647	54.172	-419.077	-8.256	-20.048	0.582
	1900.00	37.761	306.329	275.834	132.416	57.941	-449.609	-8.523	-20.696	0.569
	2000.00	37.904	308.269	277.407	136.199	61.724	-480.339	-8.776	-21.330	0.557

References

Phase	H / S	C _p
GAS	Mi1	Mi1

TeO2

TELLURIUM DIOXIDE

159.599

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
SOL	298.15	63.880	74.057	74.057	-323.423	0.000	-345.503	-323.423	-269.581	47.229
	300.00	63.976	74.452	74.058	-323.305	0.118	-345.640	-323.407	-269.247	46.880
	400.00	67.873	93.441	76.621	-316.695	6.728	-354.071	-322.453	-251.335	32.821
	500.00	70.459	108.878	81.576	-309.772	13.651	-364.211	-321.495	-233.667	24.411
	600.00	72.528	121.912	87.240	-302.620	20.803	-375.767	-320.630	-216.185	18.821
	700.00	74.354	133.232	93.020	-295.274	28.149	-388.537	-319.887	-198.838	14.837
	800.00	76.050	143.272	98.685	-287.753	35.670	-402.371	-336.894	-179.709	11.734
	900.00	77.671	152.324	104.150	-280.067	43.356	-417.158	-336.378	-160.090	9.291
	1000.00	79.245	160.589	109.387	-272.221	51.202	-432.810	-335.760	-140.535	7.341
	1006.00	79.338	161.064	109.694	-271.745	51.678	-433.775	-335.719	-139.364	7.236
LIQ			28.906		29.079					
	1006.00	114.822	189.969	109.694	-242.666	80.757	-433.775	-306.640	-139.364	7.236
	1100.00	115.027	200.235	116.999	-231.863	91.560	-452.121	-302.677	-123.913	5.884
	1200.00	115.244	210.253	124.358	-220.349	103.074	-472.653	-298.478	-107.848	4.694

References

Phase	H / S	C _p
SOL	Mi1	Mi1
LIQ	Mi1	Mi1

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [—]
GAS	298.15	42.172	274.998	274.998	-59.413	0.000	-141.404	-59.413	-65.482	11.472
	300.00	42.340	275.260	274.999	-59.335	0.078	-141.913	-59.437	-65.519	11.408
	400.00	48.339	288.380	276.747	-54.760	4.653	-170.112	-60.518	-67.375	8.798
	500.00	51.246	299.512	280.218	-49.766	9.647	-199.522	-61.489	-68.978	7.206
	600.00	52.936	309.017	284.245	-44.550	14.863	-229.960	-62.560	-70.378	6.127
	700.00	54.051	317.266	288.386	-39.197	20.216	-261.283	-63.810	-71.585	5.342
	800.00	54.860	324.538	292.460	-33.750	25.663	-293.381	-82.890	-70.718	4.617
	900.00	55.491	331.038	296.391	-28.231	31.182	-326.165	-84.543	-69.097	4.010
	1000.00	56.011	336.912	300.155	-22.656	36.757	-359.568	-86.195	-67.293	3.515
	1100.00	56.459	342.272	303.743	-17.031	42.382	-393.531	-87.845	-65.323	3.102
	1200.00	56.858	347.202	307.162	-11.365	48.048	-428.008	-89.494	-63.202	2.751
	1300.00	57.223	351.768	310.420	-5.661	53.752	-462.959	-91.138	-60.945	2.449
	1400.00	57.562	356.021	313.527	0.078	59.491	-498.351	-139.217	-56.069	2.092
	1500.00	57.882	360.003	316.494	5.851	65.264	-534.154	-139.277	-50.128	1.746
	1600.00	58.189	363.749	319.332	11.654	71.067	-570.343	-139.324	-44.183	1.442
	1700.00	58.484	367.285	322.049	17.488	76.901	-606.897	-139.362	-38.236	1.175
	1800.00	58.771	370.636	324.656	23.351	82.764	-643.794	-139.389	-32.286	0.937
	1900.00	59.051	373.821	327.161	29.242	88.655	-681.019	-139.403	-26.336	0.724
	2000.00	59.326	376.857	329.570	35.161	94.574	-718.554	-139.402	-20.385	0.532

References

Phase	H / S	C _p
GAS	Mi1	Mi1

Te2O2[g]

DITELLURIUM DIOXIDE (GAS)

287.199

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	70.496	327.298	327.298	-108.784	0.000	-206.368	-108.784	-115.688	20.268
	300.00	70.670	327.735	327.300	-108.653	0.131	-206.974	-108.803	-115.731	20.151
	400.00	76.965	349.046	330.162	-101.231	7.553	-240.849	-109.722	-117.899	15.396
	500.00	80.178	366.598	335.748	-93.359	15.425	-276.658	-110.721	-119.832	12.519
	600.00	82.179	381.405	342.156	-85.234	23.550	-314.077	-112.011	-121.539	10.581
	700.00	83.606	394.185	348.696	-76.942	31.842	-352.872	-113.669	-123.002	9.178
	800.00	84.729	405.425	355.099	-68.523	40.261	-392.863	-150.969	-120.439	7.864
	900.00	85.673	415.461	361.258	-60.002	48.782	-433.916	-153.384	-116.478	6.760
	1000.00	86.508	424.531	367.139	-51.392	57.392	-475.923	-155.767	-112.249	5.863
	1100.00	87.271	432.813	372.739	-42.703	66.081	-518.796	-158.118	-107.783	5.118
	1200.00	87.984	440.437	378.067	-33.940	74.844	-562.464	-160.435	-103.105	4.488
	1300.00	88.663	447.506	383.140	-25.107	83.677	-606.865	-162.717	-98.234	3.947
	1400.00	89.317	454.101	387.975	-16.208	92.576	-651.949	-257.841	-88.207	3.291
	1500.00	89.952	460.285	392.592	-7.244	101.540	-697.672	-256.902	-76.123	2.651
	1600.00	90.574	466.110	397.007	1.782	110.566	-743.995	-255.910	-64.103	2.093
	1700.00	91.184	471.620	401.235	10.870	119.654	-790.883	-254.872	-52.146	1.602
	1800.00	91.786	476.849	405.292	20.019	128.803	-838.309	-253.788	-40.252	1.168
	1900.00	92.381	481.827	409.190	29.227	138.011	-886.245	-252.651	-28.420	0.781
	2000.00	92.970	486.581	412.942	38.495	147.279	-934.667	-251.456	-16.649	0.435

References

Phase	H / S	C _p
GAS	Mi1	Mi1

232.038 THORIUM Th										
Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-A	298.15	27.348	53.388	53.388	0.000	0.000	-15.918	0.000	0.000	0.000
	300.00	27.372	53.557	53.388	0.051	0.051	-16.016	0.000	0.000	0.000
	400.00	28.644	61.606	54.477	2.851	2.851	-21.791	0.000	0.000	0.000
	500.00	29.916	68.134	56.575	5.779	5.779	-28.288	0.000	0.000	0.000
	600.00	31.188	73.701	58.976	8.835	8.835	-35.386	0.000	0.000	0.000
	700.00	32.459	78.604	61.437	12.017	12.017	-43.006	0.000	0.000	0.000
	800.00	33.731	83.021	63.863	15.326	15.326	-51.090	0.000	0.000	0.000
	900.00	35.003	87.067	66.220	18.763	18.763	-59.598	0.000	0.000	0.000
	1000.00	36.275	90.821	68.494	22.327	22.327	-68.494	0.000	0.000	0.000
	1100.00	37.547	94.338	70.685	26.018	26.018	-77.754	0.000	0.000	0.000
	1200.00	38.819	97.660	72.796	29.837	29.837	-87.355	0.000	0.000	0.000
	1300.00	40.091	100.817	74.831	33.782	33.782	-97.280	0.000	0.000	0.000
	1400.00	41.363	103.835	76.796	37.855	37.855	-107.514	0.000	0.000	0.000
	1500.00	42.635	106.732	78.696	42.055	42.055	-118.043	0.000	0.000	0.000
	1600.00	43.907	109.524	80.536	46.382	46.382	-128.857	0.000	0.000	0.000
	1636.00	44.365	110.506	81.184	47.971	47.971	-132.818	0.000	0.000	0.000
SOL-B			1.672		2.736					
	1636.00	46.024	112.179	81.184	50.707	50.707	-132.818	0.000	0.000	0.000
	1700.00	46.024	113.945	82.385	53.652	53.652	-140.054	0.000	0.000	0.000
	1800.00	46.024	116.575	84.212	58.255	58.255	-151.581	0.000	0.000	0.000
	1900.00	46.024	119.064	85.981	62.857	62.857	-163.364	0.000	0.000	0.000
	2000.00	46.024	121.425	87.695	67.459	67.459	-175.390	0.000	0.000	0.000
	2028.00	46.024	122.064	88.165	68.748	68.748	-178.799	0.000	0.000	0.000
LIQ			7.949		16.121					
	2028.00	46.024	130.014	88.165	84.869	84.869	-178.799	0.000	0.000	0.000
	2100.00	46.024	131.619	89.628	88.183	88.183	-188.218	0.000	0.000	0.000
	2200.00	46.024	133.760	91.585	92.785	92.785	-201.488	0.000	0.000	0.000
	2300.00	46.024	135.806	93.464	97.388	97.388	-214.967	0.000	0.000	0.000
	2400.00	46.024	137.765	95.269	101.990	101.990	-228.646	0.000	0.000	0.000
	2500.00	46.024	139.644	97.007	106.592	106.592	-242.517	0.000	0.000	0.000
	2600.00	46.024	141.449	98.682	111.195	111.195	-256.572	0.000	0.000	0.000
	2700.00	46.024	143.186	100.298	115.797	115.797	-270.804	0.000	0.000	0.000
	2800.00	46.024	144.860	101.860	120.400	120.400	-285.207	0.000	0.000	0.000
	2900.00	46.024	146.475	103.370	125.002	125.002	-299.774	0.000	0.000	0.000
	3000.00	46.024	148.035	104.833	129.604	129.604	-314.500	0.000	0.000	0.000
	3100.00	46.024	149.544	106.252	134.207	134.207	-329.380	0.000	0.000	0.000
	3200.00	46.024	151.005	107.627	138.809	138.809	-344.408	0.000	0.000	0.000
	3300.00	46.024	152.421	108.963	143.412	143.412	-359.579	0.000	0.000	0.000
	3400.00	46.024	153.795	110.262	148.014	148.014	-374.890	0.000	0.000	0.000
	3500.00	46.024	155.130	111.525	152.616	152.616	-390.337	0.000	0.000	0.000
	3600.00	46.024	156.426	112.754	157.219	157.219	-405.915	0.000	0.000	0.000
	3700.00	46.024	157.687	113.952	161.821	161.821	-421.621	0.000	0.000	0.000
	3800.00	46.024	158.914	115.119	166.424	166.424	-437.451	0.000	0.000	0.000
	3900.00	46.024	160.110	116.257	171.026	171.026	-453.403	0.000	0.000	0.000
	4000.00	46.024	161.275	117.368	175.628	175.628	-469.472	0.000	0.000	0.000

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[—————]	J / (K mol)	—————	[—————]	—————	kJ / mol	—————	—————	[- -]
LIQ	4100.00	46.024	162.412	118.453	180.231	180.231	-485.657	0.000	0.000	0.000
	4200.00	46.024	163.521	119.513	184.833	184.833	-501.954	0.000	0.000	0.000
	4300.00	46.024	164.604	120.549	189.436	189.436	-518.360	0.000	0.000	0.000
	4400.00	46.024	165.662	121.562	194.038	194.038	-534.874	0.000	0.000	0.000
	4500.00	46.024	166.696	122.554	198.640	198.640	-551.492	0.000	0.000	0.000
	4600.00	46.024	167.708	123.524	203.243	203.243	-568.212	0.000	0.000	0.000
	4700.00	46.024	168.697	124.475	207.845	207.845	-585.033	0.000	0.000	0.000
	4800.00	46.024	169.666	125.406	212.448	212.448	-601.951	0.000	0.000	0.000
	4900.00	46.024	170.615	126.319	217.050	217.050	-618.965	0.000	0.000	0.000
	5000.00	46.024	171.545	127.215	221.652	221.652	-636.073	0.000	0.000	0.000
	5056.00	46.024	172.058	127.709	224.230	224.230	-645.694	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL-A	Hu1, C _p 1	Hu1	
SOL-B	Hu1	Hu1	
LIQ	Hu1	Hu1	Hu1 BPT= 5056., L= 514.14 kJ

THORIUM (GAS)										Th[g]
Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
GAS	298.15	20.794	190.163	190.163	575.300	0.000	518.603	575.300	534.520	–93.646
	300.00	20.796	190.292	190.164	575.338	0.038	518.251	575.288	534.267	–93.024
	400.00	20.852	196.282	190.980	577.421	2.121	498.908	574.569	520.699	–67.996
	500.00	21.081	200.954	192.524	579.515	4.215	479.038	573.736	507.325	–53.000
	600.00	21.643	204.842	194.262	581.648	6.348	458.743	572.814	494.129	–43.018
	700.00	22.554	208.242	196.021	583.855	8.555	438.086	571.838	481.091	–35.899
	800.00	23.764	211.330	197.744	586.169	10.869	417.105	570.842	468.195	–30.570
	900.00	25.190	214.210	199.415	588.615	13.315	395.827	569.852	455.424	–26.432
	1000.00	26.738	216.943	201.032	591.211	15.911	374.268	568.884	442.762	–23.128
	1100.00	28.302	219.565	202.599	593.963	18.663	352.442	567.945	430.196	–20.428
	1200.00	29.774	222.092	204.118	596.868	21.568	330.358	567.032	417.713	–18.183
	1300.00	31.086	224.527	205.595	599.911	24.611	308.026	566.129	405.307	–16.285
	1400.00	32.307	226.876	207.032	603.082	27.782	285.455	565.228	392.970	–14.662
	1500.00	33.360	229.142	208.431	606.367	31.067	262.654	564.313	380.697	–13.257
	1600.00	34.229	231.324	209.794	609.748	34.448	239.630	563.367	368.487	–12.030
	1700.00	34.923	233.421	211.122	613.207	37.907	216.392	559.555	356.446	–10.952
	1800.00	35.461	235.433	212.418	616.728	41.428	192.948	558.473	344.530	–9.998
	1900.00	35.866	237.362	213.680	620.295	44.995	169.308	557.438	332.672	–9.146
	2000.00	36.164	239.209	214.911	623.897	48.597	145.479	556.438	320.869	–8.380
	2100.00	36.374	240.979	216.110	627.525	52.225	121.469	539.342	309.687	–7.703
	2200.00	36.516	242.675	217.279	631.170	55.870	97.285	538.385	298.773	–7.094
	2300.00	36.607	244.300	218.419	634.826	59.526	72.936	537.439	287.903	–6.538
	2400.00	36.661	245.859	219.530	638.490	63.190	48.428	536.500	277.074	–6.030
	2500.00	36.689	247.357	220.613	642.158	66.858	23.766	535.565	266.283	–5.564
	2600.00	36.701	248.796	221.670	645.827	70.527	–1.042	534.632	255.530	–5.134
	2700.00	36.705	250.181	222.700	649.498	74.198	–25.991	533.700	244.813	–4.736
	2800.00	36.709	251.516	223.706	653.168	77.868	–51.076	532.769	234.131	–4.368
	2900.00	36.717	252.804	224.687	656.839	81.539	–76.293	531.838	223.482	–4.025
	3000.00	36.733	254.049	225.645	660.512	85.212	–101.636	530.908	212.865	–3.706
	3100.00	36.761	255.254	226.581	664.186	88.886	–127.101	529.980	202.279	–3.408
	3200.00	36.803	256.422	227.495	667.865	92.565	–152.685	529.055	191.722	–3.130
	3300.00	36.862	257.555	228.389	671.548	96.248	–178.384	528.136	181.195	–2.868
	3400.00	36.937	258.657	229.263	675.237	99.937	–204.195	527.224	170.695	–2.622
	3500.00	37.029	259.729	230.118	678.936	103.636	–230.115	526.319	160.222	–2.391
	3600.00	37.139	260.773	230.956	682.644	107.344	–256.140	525.425	149.775	–2.173
	3700.00	37.267	261.793	231.775	686.364	111.064	–282.269	524.543	139.353	–1.967
	3800.00	37.411	262.788	232.578	690.098	114.798	–308.498	523.674	128.954	–1.773
	3900.00	37.572	263.762	233.365	693.847	118.547	–334.825	522.821	118.577	–1.588
	4000.00	37.747	264.716	234.137	697.613	122.313	–361.249	521.984	108.223	–1.413
	4100.00	37.935	265.650	234.895	701.397	126.097	–387.768	521.166	97.889	–1.247
	4200.00	38.135	266.566	235.638	705.200	129.900	–414.379	520.367	87.575	–1.089
	4300.00	38.344	267.466	236.368	709.024	133.724	–441.081	519.588	77.280	–0.939
	4400.00	38.562	268.350	237.084	712.869	137.569	–467.872	518.831	67.002	–0.795
	4500.00	38.786	269.219	237.789	716.736	141.436	–494.750	518.096	56.742	–0.659
	4600.00	39.013	270.074	238.482	720.626	145.326	–521.715	517.384	46.497	–0.528
	4700.00	39.242	270.916	239.163	724.539	149.239	–548.765	516.694	36.268	–0.403
	4800.00	39.470	271.744	239.833	728.475	153.175	–575.898	516.027	26.053	–0.284
	4900.00	39.694	272.560	240.492	732.433	157.133	–603.113	515.383	15.852	–0.169
	5000.00	39.912	273.365	241.142	736.413	161.113	–630.409	514.761	5.664	–0.059

Th[g]

THORIUM (GAS) [continued]

232.038

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	5100.00	40.122	274.157	241.781	740.415	165.115	-657.786	0.000	0.000	0.000
	5200.00	40.321	274.938	242.412	744.437	169.137	-685.240	0.000	0.000	0.000
	5300.00	40.505	275.708	243.033	748.479	173.179	-712.773	0.000	0.000	0.000
	5400.00	40.673	276.467	243.645	752.538	177.238	-740.382	0.000	0.000	0.000
	5500.00	40.821	277.214	244.248	756.613	181.313	-768.066	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

ThBr4

THORIUM TETRABROMIDE

551.654

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-A	298.15	125.188	220.999	220.999	-965.617	0.000	-1031.508	-965.617	-924.828	162.026
	300.00	125.298	221.774	221.001	-965.385	0.232	-1031.917	-965.716	-924.574	160.983
	400.00	129.731	258.485	225.977	-952.614	13.003	-1056.008	-1024.709	-898.584	117.343
	500.00	132.645	287.763	235.504	-939.488	26.129	-1083.369	-1021.895	-867.376	90.614
	600.00	134.962	312.158	246.303	-926.104	39.513	-1113.399	-1019.004	-836.742	72.845
	693.00	136.860	331.741	256.483	-913.463	52.154	-1143.360	-1016.265	-808.694	60.955
SOL-B			6.038		4.184					
	693.00	136.814	337.779	256.483	-909.279	56.338	-1143.360	-1012.081	-808.694	60.955
	700.00	136.945	339.155	257.303	-908.321	57.296	-1145.729	-1011.873	-806.640	60.192
	800.00	138.749	357.560	268.708	-894.535	71.082	-1180.583	-1008.893	-777.524	50.767
	900.00	140.461	374.002	279.510	-880.574	85.043	-1217.176	-1005.883	-748.784	43.458
	970.00	141.623	384.566	286.714	-870.701	94.916	-1243.730	-1003.762	-728.867	39.250
LIQ			64.744		62.802					
	970.00	171.544	449.310	286.714	-807.899	157.718	-1243.730	-940.960	-728.867	39.250
	1000.00	171.544	454.535	291.671	-802.753	162.864	-1257.288	-939.157	-722.335	37.731
	1100.00	171.544	470.885	307.232	-785.598	180.019	-1303.572	-933.239	-700.941	33.285
	1126.00	171.544	474.893	311.057	-781.138	184.479	-1315.867	-931.724	-695.468	32.262

References

Phase	H / S	C _p	Remarks
SOL-A	Pa2	Pa2	
SOL-B	Pa2	Pa2	
LIQ	Pa2	Pa2	Pa2 BPT= 1126., L= 109.24 kJ

Phase	T [K]	C _p [————— J / (K mol) —————]	S —(G-H298)/T—	H [————— kJ / mol —————]	H-H298	G	ΔH _f	ΔG _f	log K _f [-]	
GAS	298.15	104.866	429.890	429.890	-760.580	0.000	-888.752	-760.580	-782.071	137.016
	300.00	104.905	430.539	429.892	-760.386	0.194	-889.548	-760.717	-782.204	136.194
	400.00	106.271	460.933	434.027	-749.817	10.763	-934.191	-821.913	-776.767	101.435
	500.00	106.907	484.723	441.873	-739.155	21.425	-981.517	-821.563	-765.523	79.974
	600.00	107.255	504.248	450.690	-728.445	32.135	-1030.994	-821.345	-754.338	65.671
	700.00	107.467	520.799	459.554	-717.708	42.872	-1082.268	-821.261	-743.179	55.457
	800.00	107.607	535.159	468.126	-706.954	53.626	-1135.081	-821.312	-732.022	47.796
	900.00	107.705	547.839	476.293	-696.188	64.392	-1189.243	-821.497	-720.851	41.837
	1000.00	107.776	559.191	484.025	-685.414	75.166	-1244.605	-821.819	-709.652	37.068
	1100.00	107.831	569.465	491.332	-674.634	85.946	-1301.046	-822.275	-698.415	33.165
	1200.00	107.873	578.850	498.240	-663.849	96.731	-1358.468	-822.867	-687.130	29.910
	1300.00	107.908	587.486	504.777	-653.059	107.521	-1416.791	-823.595	-675.790	27.154
	1400.00	107.937	595.484	510.974	-642.267	118.313	-1475.944	-824.458	-664.389	24.789
	1500.00	107.961	602.931	516.859	-631.472	129.108	-1535.869	-825.457	-652.921	22.737
	1600.00	107.982	609.900	522.459	-620.675	139.905	-1596.514	-826.592	-641.382	20.939
	1700.00	108.000	616.446	527.797	-609.876	150.704	-1657.835	-830.679	-629.660	19.347
	1800.00	108.016	622.620	532.895	-599.075	161.505	-1719.791	-832.107	-617.794	17.928
	1900.00	108.031	628.461	537.773	-588.273	172.307	-1782.348	-833.543	-605.849	16.656
	2000.00	108.045	634.002	542.447	-577.469	183.111	-1845.473	-834.987	-593.827	15.509

References

Phase	H / S	C _p
GAS	Pa2	Pa2

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-A	298.15	56.692	70.291	70.291	-147.695	0.000	-168.652	-147.695	-149.414	26.177
	300.00	56.809	70.642	70.292	-147.590	0.105	-168.783	-147.671	-149.425	26.017
	400.00	61.385	87.678	72.584	-141.657	6.038	-176.729	-146.551	-150.187	19.612
	500.00	64.255	101.702	77.047	-135.367	12.328	-186.218	-145.772	-151.194	15.795
	600.00	66.466	113.619	82.173	-128.828	18.867	-196.999	-145.353	-152.324	13.261
	700.00	68.368	124.010	87.423	-122.084	25.611	-208.891	-145.241	-153.498	11.454
	800.00	70.103	133.254	92.585	-115.160	32.535	-221.763	-145.359	-154.672	10.099
	900.00	71.741	141.606	97.575	-108.067	39.628	-235.513	-145.646	-155.820	9.044
	1000.00	73.316	149.247	102.366	-100.814	46.881	-250.061	-146.068	-156.929	8.197
	1100.00	74.851	156.307	106.952	-93.405	54.290	-265.343	-146.598	-157.990	7.502
	1200.00	76.356	162.884	111.342	-85.845	61.850	-281.306	-147.212	-158.999	6.921
	1300.00	77.841	169.055	115.547	-78.135	69.560	-297.906	-147.893	-159.954	6.427
	1400.00	79.312	174.878	119.579	-70.277	77.418	-315.105	-148.626	-160.855	6.002
	1500.00	80.771	180.399	123.451	-62.273	85.422	-332.871	-149.399	-161.702	5.631
	1600.00	82.224	185.659	127.176	-54.123	93.572	-351.176	-150.202	-162.496	5.305
	1700.00	83.671	190.687	130.765	-45.828	101.867	-369.996	-153.841	-163.130	5.012
SOL-B			1.231		2.092					
	1700.00	83.680	191.917	130.765	-43.736	103.959	-369.996	-151.749	-163.130	5.012
	1763.00	83.680	194.962	133.005	-38.464	109.231	-382.183	-152.331	-163.541	4.845
SOL-C			5.933		10.460					
	1763.00	83.680	200.895	133.005	-28.004	119.691	-382.183	-141.871	-163.541	4.845
	1800.00	83.680	202.633	134.418	-24.908	122.787	-389.648	-142.219	-163.993	4.759
	1900.00	83.680	207.158	138.129	-16.540	131.155	-410.140	-143.176	-165.176	4.541
	2000.00	83.680	211.450	141.689	-8.172	139.523	-431.072	-144.158	-166.309	4.344
	2100.00	83.680	215.533	145.108	0.196	147.891	-452.423	-161.285	-166.819	4.149
	2200.00	83.680	219.426	148.399	8.564	156.259	-474.172	-162.311	-167.059	3.966
	2300.00	83.680	223.145	151.568	16.932	164.627	-496.302	-163.355	-167.251	3.798
	2400.00	83.680	226.707	154.625	25.300	172.995	-518.796	-164.415	-167.398	3.643

References

Phase	H / S	C _p
SOL-A	Pa3	Pa3
SOL-B	Pa3	Pa3
SOL-C	Pa3	Pa3

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL-A	298.15	120.290	190.372	190.372	-1186.758	0.000	-1243.517	-1186.758	-1094.555	191.762
	300.00	120.418	191.116	190.374	-1186.535	0.223	-1243.870	-1186.712	-1093.983	190.479
	400.00	125.753	226.551	195.169	-1174.205	12.553	-1264.826	-1184.117	-1063.461	138.874
	500.00	129.471	255.029	204.386	-1161.436	25.322	-1288.951	-1181.417	-1033.608	107.980
	600.00	132.554	278.913	214.869	-1148.332	38.426	-1315.680	-1178.638	-1004.306	87.433
	679.00	134.768	295.444	223.299	-1137.772	48.986	-1338.378	-1176.386	-981.494	75.505
SOL-B			7.395		5.021					
	679.00	134.762	302.839	223.299	-1132.751	54.007	-1338.378	-1176.386	-981.494	75.505
	700.00	135.327	306.952	225.748	-1129.915	56.843	-1344.781	-1170.757	-975.631	72.802
	800.00	137.939	325.195	237.060	-1116.250	70.508	-1376.406	-1167.813	-947.955	61.895
	900.00	140.466	341.588	247.779	-1102.330	84.428	-1409.759	-1164.780	-920.654	53.433
	1000.00	142.939	356.516	257.917	-1088.159	98.599	-1444.675	-1161.656	-893.696	46.682
LIQ	1042.00	143.966	362.418	262.011	-1082.134	104.624	-1459.773	-1160.316	-882.469	44.237
			58.986		61.463					
	1042.00	167.360	421.403	262.011	-1020.671	166.087	-1459.773	-1160.316	-882.469	44.237
	1100.00	167.360	430.469	270.656	-1010.964	175.794	-1484.480	-1095.660	-870.512	41.337
	1200.00	167.360	445.031	284.590	-994.228	192.530	-1528.265	-1090.270	-850.283	37.012
	1300.00	167.360	458.427	297.453	-977.492	209.266	-1573.447	-1085.025	-830.498	33.370
	1400.00	167.360	470.830	309.400	-960.756	226.002	-1619.918	-1079.924	-811.112	30.263
	1500.00	167.360	482.376	320.551	-944.020	242.738	-1667.585	-1074.966	-792.085	27.583

References

Phase	H / S	C _p
SOL-A	Nb1,Ra3	Pa2
SOL-B	Pa2	Pa2
LIQ	Pa2	Pa2

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
GAS	298.15	101.557	397.589	397.589	-966.261	0.000	-1084.802	-966.261	-935.840	163.955
	300.00	101.629	398.218	397.591	-966.073	0.188	-1085.538	-966.249	-935.652	162.911
	400.00	104.280	427.867	401.616	-955.760	10.501	-1126.907	-965.672	-925.543	120.863
	500.00	105.590	451.292	409.291	-945.260	21.001	-1170.906	-965.241	-915.564	95.648
	600.00	106.328	470.615	417.948	-934.661	31.600	-1217.030	-964.968	-905.656	78.844
	700.00	106.784	487.042	426.675	-924.004	42.257	-1264.933	-964.846	-895.783	66.844
	800.00	107.085	501.322	435.133	-913.309	52.952	-1314.367	-964.872	-885.917	57.844
	900.00	107.293	513.948	443.202	-902.590	63.671	-1365.143	-965.041	-876.038	50.844
	1000.00	107.443	525.260	450.852	-891.853	74.408	-1417.113	-965.350	-866.134	45.242
	1100.00	107.555	535.506	458.089	-881.103	85.158	-1470.159	-965.798	-856.192	40.657
	1200.00	107.640	544.869	464.937	-870.343	95.918	-1524.185	-966.384	-846.203	36.834
	1300.00	107.706	553.487	471.421	-859.575	106.686	-1579.108	-967.109	-836.159	33.597
	1400.00	107.758	561.471	477.572	-848.802	117.459	-1634.861	-967.970	-826.055	30.820
	1500.00	107.800	568.907	483.415	-838.024	128.237	-1691.384	-968.970	-815.884	28.412
	1600.00	107.834	575.865	488.978	-827.242	139.019	-1748.627	-970.107	-805.642	26.302
	1700.00	107.862	582.403	494.284	-816.458	149.803	-1806.543	-974.199	-795.216	24.434
	1800.00	107.885	588.569	499.352	-805.670	160.591	-1865.095	-975.635	-784.646	22.770
	1900.00	107.904	594.403	504.203	-794.881	171.380	-1924.246	-977.083	-773.996	21.279
	2000.00	107.920	599.938	508.852	-784.089	182.172	-1983.965	-978.544	-763.270	19.935

References

Phase	H / S	C _p
GAS	Nb1	Pa2

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	52.416	295.219	295.219	-654.332	0.000	-742.352	-654.332	-665.971	116.675
	300.00	52.481	295.544	295.221	-654.235	0.097	-742.898	-654.344	-666.043	115.968
	400.00	54.788	311.004	297.313	-648.855	5.477	-773.257	-654.978	-669.849	87.473
	500.00	55.879	323.360	301.329	-643.316	11.016	-804.996	-655.730	-673.483	70.358
	600.00	56.491	333.607	305.879	-637.695	16.637	-837.859	-656.637	-676.950	58.934
	700.00	56.876	342.346	310.480	-632.025	22.307	-871.668	-657.700	-680.254	50.761
	800.00	57.141	349.959	314.949	-626.324	28.008	-906.291	-658.914	-683.395	44.621
	900.00	57.335	356.701	319.221	-620.600	33.732	-941.631	-660.274	-686.375	39.836
	1000.00	57.486	362.750	323.276	-614.858	39.474	-977.608	-661.777	-689.196	36.000
	1100.00	57.609	368.235	327.118	-609.103	45.229	-1014.162	-663.420	-691.859	32.854
	1200.00	57.713	373.252	330.756	-603.337	50.995	-1051.240	-665.200	-694.367	30.225
	1300.00	57.802	377.875	334.205	-597.561	56.771	-1088.799	-667.116	-696.721	27.995
	1400.00	57.882	382.162	337.480	-591.777	62.555	-1126.804	-669.168	-698.922	26.077
	1500.00	57.955	386.158	340.593	-585.985	68.347	-1165.222	-671.353	-700.972	24.410
	1600.00	58.022	389.900	343.559	-580.186	74.146	-1204.027	-673.671	-702.872	22.946
	1700.00	58.084	393.420	346.390	-574.381	79.951	-1243.194	-678.937	-704.514	21.647
	1800.00	58.143	396.741	349.096	-568.569	85.763	-1282.704	-681.541	-705.943	20.486
	1900.00	58.200	399.887	351.687	-562.752	91.580	-1322.537	-684.149	-707.227	19.443
	2000.00	58.254	402.873	354.172	-556.929	97.403	-1362.676	-686.761	-708.375	18.501

References

Phase	H / S	C _p
GAS	Pa2	Pa2

ThF3[g]

THORIUM TRIFLUORIDE (GAS)

289.033

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
GAS	298.15	73.303	339.315	339.315	-1184.695	0.000	-1285.862	-1184.695	-1179.249	206.600
	300.00	73.414	339.768	339.316	-1184.559	0.136	-1286.490	-1184.697	-1179.215	205.320
	400.00	77.336	361.505	342.253	-1176.994	7.701	-1321.596	-1184.753	-1177.379	153.750
	500.00	79.190	378.983	347.909	-1169.158	15.537	-1358.650	-1184.890	-1175.523	122.806
	600.00	80.230	393.521	354.334	-1161.183	23.512	-1397.295	-1185.179	-1173.625	102.173
	700.00	80.885	405.941	360.841	-1153.125	31.570	-1437.284	-1185.629	-1171.666	87.431
	800.00	81.336	416.773	367.170	-1145.012	39.683	-1478.431	-1186.235	-1169.632	76.369
	900.00	81.668	426.373	373.225	-1136.861	47.834	-1520.597	-1186.992	-1167.513	67.761
	1000.00	81.926	434.991	378.978	-1128.681	56.014	-1563.673	-1187.896	-1165.301	60.869
	1100.00	82.135	442.810	384.431	-1120.478	64.217	-1607.569	-1188.944	-1162.992	55.226
	1200.00	82.312	449.964	389.598	-1112.255	72.440	-1652.213	-1190.132	-1160.581	50.519
	1300.00	82.465	456.559	394.499	-1104.016	80.679	-1697.543	-1191.458	-1158.066	46.532
	1400.00	82.601	462.675	399.153	-1095.763	88.932	-1743.509	-1192.922	-1155.443	43.110
	1500.00	82.725	468.379	403.580	-1087.497	97.198	-1790.064	-1194.521	-1152.711	40.141
	1600.00	82.840	473.721	407.798	-1079.218	105.477	-1837.172	-1196.254	-1149.868	37.539
	1700.00	82.947	478.747	411.825	-1070.929	113.766	-1884.798	-1200.938	-1146.804	35.237
	1800.00	83.049	483.491	415.676	-1062.629	122.066	-1932.912	-1202.959	-1143.561	33.185
	1900.00	83.146	487.984	419.365	-1054.319	130.376	-1981.488	-1204.986	-1140.206	31.346
	2000.00	83.239	492.251	422.903	-1046.000	138.695	-2030.501	-1207.018	-1136.744	29.689

References

Phase	H / S	C _p
GAS	Pa2	Pa2

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	110.543	142.047	142.047	-2098.038	0.000	-2140.389	-2098.038	-2003.545	351.013
	300.00	110.732	142.731	142.049	-2097.833	0.205	-2140.653	-2098.000	-2002.959	348.746
	400.00	117.672	175.663	146.492	-2086.370	11.668	-2156.635	-2095.764	-1971.609	257.466
	500.00	121.334	202.349	155.080	-2074.403	23.635	-2175.578	-2093.452	-1940.838	202.758
	600.00	123.706	224.694	164.871	-2062.144	35.894	-2196.961	-2091.194	-1910.529	166.326
	700.00	125.468	243.901	174.821	-2049.682	48.356	-2220.413	-2089.015	-1880.591	140.331
	800.00	126.905	260.751	184.531	-2037.062	60.976	-2245.662	-2086.916	-1850.961	120.855
	900.00	128.154	275.772	193.849	-2024.307	73.731	-2272.502	-2084.894	-1821.588	105.722
	1000.00	129.285	289.334	202.730	-2011.435	86.603	-2300.768	-2082.946	-1792.437	93.627
	1100.00	130.340	301.706	211.174	-1998.453	99.585	-2330.329	-2081.068	-1763.478	83.741
	1200.00	131.342	313.090	219.199	-1985.368	112.670	-2361.077	-2079.258	-1734.687	75.509
	1300.00	132.308	323.642	226.832	-1972.186	125.852	-2392.920	-2077.514	-1706.044	68.550
	1383.00	133.089	331.854	232.891	-1961.172	136.866	-2420.126	-2076.115	-1682.371	63.542
			30.253		41.840					
LIQ	1383.00	133.888	362.107	232.891	-1919.332	178.706	-2420.126	-2034.275	-1682.371	63.542
	1400.00	133.888	363.743	234.470	-1917.055	180.983	-2426.296	-2033.982	-1678.047	62.609
	1500.00	133.888	372.980	243.399	-1903.667	194.371	-2463.137	-2032.347	-1652.681	57.551
	1600.00	133.888	381.621	251.771	-1890.278	207.760	-2500.872	-2030.865	-1627.419	53.130
	1700.00	133.888	389.738	259.651	-1876.889	221.149	-2539.444	-2032.350	-1602.136	49.228
	1800.00	133.888	397.391	267.092	-1863.500	234.538	-2578.804	-2031.189	-1576.863	45.759
	1900.00	133.888	404.630	274.142	-1850.111	247.927	-2618.908	-2030.048	-1551.654	42.658
	2000.00	133.888	411.497	280.840	-1836.723	261.315	-2659.718	-2028.927	-1526.504	39.868

References

Phase	H / S	C _p
SOL	Pa2	Pa2
LIQ	Pa2	Pa2

ThF4[g]

THORIUM TETRAFLUORIDE (GAS)

308.032

Phase	T [K]	C_p	S	$-(G-H_{298})/T$	H	$H-H_{298}$	G	ΔH_f	ΔG_f	$\log K_f$
		[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
GAS	298.15	93.029	341.804	341.804	-1768.033	0.000	-1869.942	-1768.033	-1733.098	303.632
	300.00	93.171	342.380	341.806	-1767.861	0.172	-1870.575	-1768.027	-1732.881	301.721
	400.00	98.749	370.035	345.539	-1758.234	9.799	-1906.248	-1767.629	-1721.223	224.769
	500.00	101.770	392.426	352.749	-1748.194	19.839	-1944.407	-1767.243	-1709.668	178.608
	600.00	103.557	411.152	360.965	-1737.921	30.112	-1984.612	-1766.971	-1698.180	147.840
	700.00	104.694	427.207	369.309	-1727.504	40.529	-2026.549	-1766.837	-1686.728	125.865
	800.00	105.458	441.240	377.442	-1716.994	51.039	-2069.986	-1766.849	-1675.285	109.385
	900.00	105.995	453.694	385.235	-1706.420	61.613	-2114.745	-1767.007	-1663.831	96.566
	1000.00	106.385	464.883	392.650	-1695.800	72.233	-2160.683	-1767.311	-1652.352	86.310
	1100.00	106.677	475.037	399.685	-1685.146	82.887	-2207.687	-1767.762	-1640.836	77.917
	1200.00	106.900	484.329	406.357	-1674.467	93.566	-2255.662	-1768.357	-1629.272	70.920
	1300.00	107.075	492.893	412.689	-1663.768	104.265	-2304.528	-1769.097	-1617.652	64.998
	1400.00	107.213	500.833	418.705	-1653.053	114.980	-2354.220	-1769.980	-1605.971	59.919
	1500.00	107.324	508.234	424.429	-1642.326	125.707	-2404.677	-1771.007	-1594.221	55.516
	1600.00	107.414	515.163	429.886	-1631.589	136.444	-2455.851	-1772.177	-1582.398	51.660
	1700.00	107.488	521.678	435.096	-1620.844	147.189	-2507.696	-1776.305	-1570.388	48.252
	1800.00	107.549	527.823	440.078	-1610.092	157.941	-2560.174	-1777.781	-1558.233	45.219
	1900.00	107.600	533.640	444.851	-1599.334	168.699	-2613.250	-1779.271	-1545.995	42.502
	2000.00	107.643	539.160	449.429	-1588.572	179.461	-2666.892	-1780.776	-1533.679	40.056
	2100.00	107.679	544.413	453.828	-1577.806	190.227	-2721.073	-1798.417	-1520.714	37.826
	2200.00	107.709	549.423	458.061	-1567.037	200.996	-2775.766	-1799.951	-1507.454	35.792

References

Phase	H / S	C_p
GAS	Pa2	Pa2

ThH2

THORIUM DIHYDRIDE

234.054

Phase	T [K]	C_p	S	$-(G-H_{298})/T$	H	$H-H_{298}$	G	ΔH_f	ΔG_f	$\log K_f$
		[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
SOL	298.15	36.694	50.710	50.710	-139.704	0.000	-154.823	-139.704	-99.943	17.510
	300.00	36.765	50.937	50.711	-139.636	0.068	-154.917	-139.740	-99.697	17.359
	400.00	40.634	62.044	52.199	-135.766	3.938	-160.584	-141.577	-86.066	11.239
	500.00	44.503	71.527	55.137	-131.509	8.195	-167.273	-143.171	-71.998	7.522
	600.00	48.372	79.983	58.585	-126.865	12.839	-174.855	-144.511	-57.634	5.017
	700.00	52.241	87.730	62.202	-121.835	17.869	-183.246	-145.600	-43.065	3.214
	800.00	56.110	94.958	65.850	-116.417	23.287	-192.384	-146.445	-28.356	1.851
	900.00	59.979	101.790	69.467	-110.613	29.091	-202.224	-147.052	-13.556	0.787
	1000.00	63.848	108.310	73.027	-104.421	35.283	-212.731	-147.428	1.299	-0.068

References

Phase	H / S	C_p
SOL	Nb1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	126.658	255.199	255.199	-664.800	0.000	-740.888	-664.800	-655.715	114.878
	300.00	126.767	255.983	255.201	-664.566	0.234	-741.360	-664.818	-655.658	114.160
	400.00	131.042	293.098	260.233	-651.654	13.146	-768.893	-697.984	-651.331	85.055
	500.00	133.723	322.644	269.860	-638.408	26.392	-799.730	-784.054	-631.395	65.961
	600.00	135.773	347.212	280.762	-624.930	39.870	-833.257	-781.133	-601.136	52.334
	700.00	137.524	368.276	291.795	-611.263	53.537	-869.056	-778.174	-571.370	42.636
	800.00	139.115	386.744	302.533	-597.430	67.370	-906.826	-775.195	-542.030	35.391
	839.00	139.708	393.380	306.602	-591.993	72.807	-922.039	-774.030	-530.691	33.040
LIQ			57.349		48.116					
	839.00	175.728	450.729	306.602	-543.877	120.923	-922.039	-725.914	-530.691	33.040
	900.00	175.728	463.063	316.794	-533.158	131.642	-949.914	-721.920	-516.640	29.985
	1000.00	175.728	481.578	332.363	-515.585	149.215	-997.163	-715.486	-494.177	25.813
	1100.00	175.728	498.326	346.701	-498.012	166.788	-1046.171	-709.194	-472.352	22.430
	1200.00	175.728	513.617	359.983	-480.440	184.360	-1096.779	-703.042	-451.093	19.636

References

Phase	H / S	C _p
SOL	Nb1	Pa2
LIQ	Pa2	Pa2

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	106.292	468.701	468.701	-460.700	0.000	-600.443	-460.700	-515.270	90.273
	300.00	106.303	469.358	468.703	-460.503	0.197	-601.311	-460.756	-515.608	89.775
	400.00	107.131	500.049	472.882	-449.833	10.867	-649.853	-496.163	-532.290	69.510
	500.00	107.855	524.037	480.800	-439.082	21.618	-701.100	-584.727	-532.765	55.658
	600.00	108.375	543.750	489.698	-428.269	32.431	-754.519	-584.472	-522.398	45.479
	700.00	108.750	560.485	498.645	-417.412	43.288	-809.751	-584.323	-512.066	38.211
	800.00	109.030	575.026	507.304	-406.522	54.178	-866.543	-584.287	-501.747	32.761
	900.00	109.246	587.881	515.556	-395.608	65.092	-924.701	-584.370	-491.426	28.522
	1000.00	109.419	599.400	523.375	-384.674	76.026	-984.075	-584.576	-481.089	25.129
	1100.00	109.562	609.836	530.768	-373.725	86.975	-1044.545	-584.907	-470.725	22.353
	1200.00	109.683	619.375	537.760	-362.763	97.937	-1106.012	-585.365	-460.326	20.037
	1300.00	109.789	628.158	544.380	-351.789	108.911	-1168.394	-585.952	-449.883	18.077
	1400.00	109.883	636.298	550.659	-340.805	119.895	-1231.622	-586.669	-439.390	16.394
	1500.00	109.968	643.882	556.624	-329.812	130.888	-1295.636	-587.516	-428.841	14.934
	1600.00	110.046	650.982	562.302	-318.812	141.888	-1360.382	-588.495	-418.232	13.654
	1700.00	110.118	657.655	567.716	-307.804	152.896	-1425.818	-592.421	-407.448	12.519
	1800.00	110.186	663.951	572.889	-296.788	163.912	-1491.901	-593.685	-396.531	11.507
	1900.00	110.250	669.911	577.840	-285.766	174.934	-1558.597	-594.953	-385.543	10.599
	2000.00	110.312	675.567	582.587	-274.738	185.962	-1625.873	-596.227	-374.489	9.781

References

Phase	H / S	C _p
GAS	Nb1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S —(G-H298)/T—	H [————— kJ / mol —————]	H-H298	G	ΔH _f	ΔG _f	log K _f [-]	
SOL	298.15	44.901	56.070	56.070	-391.200	0.000	-407.917	-391.200	-363.436	63.672
	300.00	44.985	56.348	56.071	-391.117	0.083	-408.021	-391.194	-363.263	63.250
	400.00	48.264	69.786	57.881	-386.438	4.762	-414.352	-390.775	-354.011	46.229
	500.00	50.293	80.787	61.395	-381.504	9.696	-421.898	-390.239	-344.881	36.029
	600.00	51.831	90.098	65.423	-376.395	14.805	-430.454	-389.677	-335.862	29.239
	700.00	53.136	98.188	69.538	-371.145	20.055	-439.877	-389.131	-326.936	24.396
	800.00	54.317	105.361	73.576	-365.772	25.428	-450.061	-388.621	-318.087	20.769
	900.00	55.426	111.823	77.472	-360.284	30.916	-460.925	-388.159	-309.298	17.951
	1000.00	56.491	117.718	81.207	-354.688	36.512	-472.407	-387.747	-300.558	15.700
	1100.00	57.526	123.151	84.776	-348.987	42.213	-484.453	-387.385	-291.857	13.859
	1200.00	58.542	128.200	88.187	-343.184	48.016	-497.024	-387.075	-283.187	12.327
	1300.00	59.543	132.926	91.448	-337.279	53.921	-510.083	-386.813	-274.541	11.031
	1400.00	60.534	137.375	94.571	-331.275	59.925	-523.600	-386.598	-265.913	9.921
	1500.00	61.518	141.585	97.566	-325.173	66.027	-537.550	-386.430	-257.299	8.960
	1600.00	62.496	145.586	100.444	-318.972	72.228	-551.910	-386.306	-248.694	8.119
	1700.00	63.470	149.404	103.212	-312.674	78.526	-566.661	-389.041	-239.987	7.374
	1800.00	64.440	153.060	105.881	-306.278	84.922	-581.785	-389.022	-231.220	6.710
	1900.00	65.407	156.570	108.457	-299.786	91.414	-597.268	-388.917	-222.455	6.116
	2000.00	66.372	159.949	110.947	-293.197	98.003	-613.095	-388.725	-213.699	5.581

References

Phase	H / S	C _p	Remarks
SOL	Nb1	Ra3	Ra3 MPT= 3080.

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
SOL	298.15	147.254	200.999	200.999	-1315.002	0.000	-1374.930	-1315.002	-1212.921	212.499
	300.00	147.611	201.911	201.002	-1314.729	0.273	-1375.303	-1314.989	-1212.287	211.078
	400.00	161.062	246.442	206.982	-1299.218	15.784	-1397.795	-1313.715	-1178.220	153.860
	500.00	168.691	283.264	218.665	-1282.703	32.299	-1424.335	-1311.862	-1144.554	119.571
	600.00	174.027	314.514	232.101	-1265.554	49.448	-1454.263	-1309.847	-1111.281	96.746
	700.00	178.281	341.669	245.856	-1247.933	67.069	-1487.101	-1307.857	-1078.345	80.467
	800.00	181.959	365.720	259.364	-1229.917	85.085	-1522.493	-1305.988	-1045.687	68.276
	900.00	185.301	387.348	272.403	-1211.552	103.450	-1560.165	-1304.286	-1013.254	58.808
	1000.00	188.435	407.035	284.896	-1192.864	122.138	-1599.898	-1302.770	-981.000	51.242
	1100.00	191.433	425.136	296.834	-1173.870	141.132	-1641.519	-1301.444	-948.888	45.059
	1200.00	194.338	441.918	308.233	-1154.580	160.422	-1684.882	-1300.307	-916.889	39.911
	1300.00	197.178	457.586	319.126	-1135.004	179.998	-1729.865	-1299.356	-884.978	35.559
	1400.00	199.970	472.301	329.547	-1115.146	199.856	-1776.367	-1298.584	-853.133	31.831
	1500.00	202.728	486.191	339.531	-1095.011	219.991	-1824.298	-1297.985	-821.337	28.601
	1600.00	205.459	499.362	349.112	-1074.602	240.400	-1873.581	-1297.555	-789.575	25.777
	1700.00	208.169	511.900	358.322	-1053.920	261.082	-1924.150	-1305.736	-757.509	23.275
	1800.00	210.863	523.875	367.189	-1032.968	282.034	-1975.943	-1305.689	-725.261	21.047
	1900.00	213.544	535.347	375.740	-1011.748	303.254	-2028.908	-1305.415	-693.021	19.052
	2000.00	216.216	546.369	383.998	-990.260	324.742	-2082.997	-1304.911	-660.802	17.258

References

Phase	H / S	C _p
SOL	Nb1	Ra3

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
SOL	298.15	104.792	124.265	124.265	-1347.001	0.000	-1384.051	-1347.001	-1264.505	221.536
	300.00	105.044	124.914	124.267	-1346.807	0.194	-1384.281	-1346.989	-1263.993	220.081
	400.00	114.566	156.595	128.522	-1335.772	11.229	-1398.410	-1345.959	-1236.465	161.466
	500.00	119.980	182.785	136.833	-1324.025	22.976	-1415.417	-1344.536	-1209.252	126.330
	600.00	123.778	205.012	146.390	-1311.828	35.173	-1434.835	-1343.013	-1182.338	102.932
	700.00	126.811	224.327	156.174	-1299.294	47.707	-1456.323	-1341.514	-1155.678	86.238
	800.00	129.438	241.435	165.783	-1286.479	60.522	-1479.627	-1340.096	-1129.228	73.731
	900.00	131.829	256.820	175.057	-1273.414	73.587	-1504.553	-1338.784	-1102.950	64.014
	1000.00	134.072	270.827	183.944	-1260.118	86.883	-1530.945	-1337.587	-1076.811	56.247
	1100.00	136.220	283.707	192.436	-1246.603	100.398	-1558.681	-1336.505	-1050.787	49.898
	1200.00	138.302	295.649	200.545	-1232.877	114.124	-1587.656	-1335.539	-1024.856	44.611
	1300.00	140.338	306.800	208.295	-1218.944	128.057	-1617.784	-1334.683	-999.002	40.140
	1400.00	142.340	317.273	215.709	-1204.810	142.191	-1648.993	-1333.935	-973.209	36.311
	1500.00	144.318	327.162	222.812	-1190.477	156.524	-1681.219	-1333.291	-947.466	32.994
	1600.00	146.277	336.538	229.630	-1175.947	171.054	-1714.408	-1332.747	-921.762	30.092
	1700.00	148.222	345.465	236.183	-1161.222	185.779	-1748.512	-1332.295	-895.872	27.527
	1800.00	150.155	353.992	242.493	-1146.303	200.698	-1783.488	-1331.927	-869.877	25.243
	1900.00	152.079	362.162	248.578	-1131.191	215.810	-1819.298	-1331.640	-843.902	23.200
	2000.00	153.996	370.011	254.454	-1115.887	231.114	-1855.910	-1331.421	-817.957	21.363

References

Phase	H / S	C _p
SOL	Nb1/Ra3	Ra3

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
GAS	298.15	31.266	240.062	240.062	-25.104	0.000	-96.678	-25.104	-50.179	8.791
	300.00	31.296	240.255	240.062	-25.046	0.058	-97.123	-25.124	-50.334	8.764
	400.00	32.923	249.487	241.310	-21.833	3.271	-121.628	-26.197	-58.576	7.649
	500.00	34.109	256.970	243.717	-18.478	6.626	-146.963	-27.299	-66.544	6.952
	600.00	34.921	263.264	246.464	-15.024	10.080	-172.983	-28.480	-74.283	6.467
	700.00	35.532	268.695	249.261	-11.500	13.604	-199.587	-29.766	-81.817	6.105
	800.00	36.052	273.474	251.995	-7.920	17.184	-226.700	-31.165	-89.159	5.821
	900.00	36.544	277.749	254.623	-4.291	20.813	-254.265	-32.674	-96.319	5.590
	1000.00	37.041	281.625	257.132	-0.611	24.493	-282.236	-34.290	-103.305	5.396
	1100.00	37.560	285.179	259.523	3.118	28.222	-310.579	-36.006	-110.124	5.229
	1200.00	38.109	288.471	261.800	6.902	32.006	-339.264	-37.815	-116.783	5.083
	1300.00	38.690	291.544	263.971	10.741	35.845	-368.266	-39.713	-123.287	4.954
	1400.00	39.300	294.433	266.044	14.640	39.744	-397.566	-41.693	-129.642	4.837
	1500.00	39.937	297.166	268.029	18.602	43.706	-427.147	-43.752	-135.853	4.731
	1600.00	40.593	299.765	269.932	22.629	47.733	-456.995	-45.886	-141.924	4.633
	1700.00	41.263	302.246	271.760	26.721	51.825	-487.097	-50.910	-147.750	4.540
	1800.00	41.937	304.623	273.520	30.881	55.985	-517.441	-53.210	-153.380	4.451
	1900.00	42.609	306.909	275.218	35.109	60.213	-548.018	-55.455	-158.883	4.368
	2000.00	43.270	309.111	276.858	39.403	64.507	-578.820	-57.644	-164.270	4.290
	2100.00	43.910	311.238	278.445	43.762	68.866	-609.838	-75.901	-168.976	4.203
	2200.00	44.521	313.295	279.982	48.184	73.288	-641.065	-77.986	-173.359	4.116
	2300.00	45.094	315.287	281.474	52.665	77.769	-672.495	-80.023	-177.649	4.035
	2400.00	45.619	317.217	282.923	57.201	82.305	-704.120	-82.015	-181.850	3.958
	2500.00	46.086	319.089	284.333	61.787	86.891	-735.936	-83.969	-185.970	3.886

References

Phase	H / S	C _p
GAS	Nb1	Pa1

Phase	T [K]	C _p [——— J / (K mol) ———]	S J / (K mol)	-(G-H298)/T [———]	H [——— kJ / mol ———]	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	61.798	65.229	65.229	-1226.414	0.000	-1245.862	-1226.414	-1168.780	204.765
	300.00	61.957	65.611	65.230	-1226.300	0.114	-1245.983	-1226.404	-1168.422	203.440
	400.00	67.825	84.344	67.744	-1219.774	6.640	-1253.512	-1225.651	-1149.198	150.070
	500.00	70.947	99.844	72.660	-1212.822	13.592	-1262.744	-1224.686	-1130.194	118.071
	600.00	72.989	112.970	78.313	-1205.619	20.795	-1273.402	-1223.698	-1111.389	96.755
	700.00	74.520	124.341	84.094	-1198.241	28.173	-1285.280	-1222.756	-1092.747	81.542
	800.00	75.780	134.376	89.764	-1190.724	35.690	-1298.225	-1221.886	-1074.234	70.140
	900.00	76.881	143.367	95.229	-1183.090	43.324	-1312.120	-1221.094	-1055.826	61.279
	1000.00	77.884	151.519	100.457	-1175.351	51.063	-1326.871	-1220.381	-1037.502	54.194
	1100.00	78.823	158.987	105.443	-1167.516	58.898	-1342.401	-1219.746	-1019.245	48.400
	1200.00	79.718	165.884	110.196	-1159.588	66.826	-1358.649	-1219.186	-1001.043	43.574
	1300.00	80.583	172.299	114.729	-1151.573	74.841	-1375.562	-1218.699	-982.885	39.493
	1400.00	81.425	178.302	119.058	-1143.473	82.941	-1393.095	-1218.285	-964.761	35.996
	1500.00	82.250	183.948	123.198	-1135.289	91.125	-1411.211	-1217.942	-946.665	32.966
	1600.00	83.063	189.282	127.163	-1127.023	99.391	-1429.875	-1217.670	-928.589	30.315
	1700.00	83.867	194.342	130.967	-1118.676	107.738	-1449.058	-1220.286	-910.419	27.974
	1800.00	84.663	199.158	134.623	-1110.250	116.164	-1468.735	-1220.178	-892.194	25.891
	1900.00	85.452	203.757	138.141	-1101.744	124.670	-1488.882	-1220.014	-873.977	24.027
	2000.00	86.237	208.160	141.533	-1093.160	133.254	-1509.480	-1219.794	-855.770	22.350
	2100.00	87.018	212.387	144.807	-1084.497	141.917	-1530.509	-1235.641	-837.003	20.819
	2200.00	87.796	216.453	147.972	-1075.756	150.658	-1551.952	-1235.310	-818.028	19.422
	2300.00	88.571	220.372	151.035	-1066.938	159.476	-1573.794	-1234.925	-799.069	18.147
	2400.00	89.343	224.158	154.003	-1058.042	168.372	-1596.022	-1234.485	-780.128	16.979
	2500.00	90.114	227.821	156.883	-1049.069	177.345	-1618.622	-1233.989	-761.206	15.905

References

Phase	H / S	C _p	Remarks
SOL	Co1,Ra3	Pa1	Ra3 MPT= 3643.

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[— —]
GAS	298.15	47.354	287.601	287.601	-497.896	0.000	-583.644	-497.896	-506.562	88.748
	300.00	47.421	287.894	287.601	-497.808	0.088	-584.176	-497.913	-506.616	88.210
	400.00	50.655	302.004	289.503	-492.896	5.000	-613.697	-498.773	-509.383	66.519
	500.00	52.816	313.557	293.193	-487.714	10.182	-644.493	-499.578	-511.943	53.482
	600.00	54.213	323.319	297.422	-482.358	15.538	-676.349	-500.436	-514.337	44.777
	700.00	55.147	331.750	301.738	-476.887	21.009	-709.112	-501.402	-516.579	38.548
	800.00	55.796	339.159	305.962	-471.338	26.558	-742.665	-502.500	-518.674	33.866
	900.00	56.263	345.759	310.024	-465.734	32.162	-776.917	-503.738	-520.623	30.216
	1000.00	56.609	351.706	313.899	-460.089	37.807	-811.795	-505.119	-522.426	27.289
	1100.00	56.872	357.114	317.586	-454.415	43.481	-847.241	-506.645	-524.084	24.887
	1200.00	57.076	362.072	321.089	-448.717	49.179	-883.203	-508.315	-525.597	22.879
	1300.00	57.237	366.647	324.420	-443.001	54.895	-919.642	-510.127	-526.965	21.174
	1400.00	57.367	370.894	327.590	-437.271	60.625	-956.522	-512.083	-528.187	19.707
	1500.00	57.472	374.855	330.610	-431.529	66.367	-993.811	-514.182	-529.265	18.431
	1600.00	57.559	378.567	333.493	-425.777	72.119	-1031.484	-516.424	-530.199	17.309
	1700.00	57.631	382.059	336.248	-420.017	77.879	-1069.517	-521.627	-530.878	16.312
	1800.00	57.692	385.355	338.885	-414.251	83.645	-1107.890	-524.179	-531.349	15.419
	1900.00	57.743	388.476	341.414	-408.479	89.417	-1146.583	-526.749	-531.677	14.617
	2000.00	57.787	391.439	343.842	-402.703	95.193	-1185.580	-529.337	-531.870	13.891
	2100.00	57.825	394.259	346.176	-396.922	100.974	-1224.866	-548.066	-531.360	13.217
	2200.00	57.857	396.950	348.423	-391.138	106.758	-1264.427	-550.692	-530.503	12.596
	2300.00	57.885	399.522	350.589	-385.351	112.545	-1304.252	-553.338	-529.526	12.026
	2400.00	57.909	401.986	352.680	-379.561	118.335	-1344.328	-556.004	-528.434	11.501
	2500.00	57.931	404.351	354.700	-373.769	124.127	-1384.645	-558.689	-527.230	11.016
	2600.00	57.949	406.623	356.653	-367.975	129.921	-1425.195	-561.393	-525.918	10.566
	2700.00	57.966	408.810	358.545	-362.179	135.717	-1465.967	-564.117	-524.502	10.147
	2800.00	57.980	410.919	360.378	-356.382	141.514	-1506.954	-566.860	-522.985	9.756
	2900.00	57.993	412.954	362.156	-350.583	147.313	-1548.149	-569.622	-521.369	9.391
	3000.00	58.004	414.920	363.882	-344.783	153.113	-1589.543	-572.401	-519.658	9.048
	3100.00	58.014	416.822	365.559	-338.982	158.914	-1631.130	-575.198	-517.854	8.726
	3200.00	58.023	418.664	367.190	-333.180	164.716	-1672.905	-578.012	-515.959	8.422
	3300.00	58.031	420.450	368.777	-327.378	170.518	-1714.861	-580.843	-513.976	8.136
	3400.00	58.037	422.182	370.323	-321.574	176.322	-1756.993	-583.690	-511.908	7.865
	3500.00	58.043	423.864	371.829	-315.770	182.126	-1799.296	-586.552	-509.755	7.608
	3600.00	58.049	425.500	373.297	-309.966	187.930	-1841.765	-589.429	-507.520	7.364
	3700.00	58.054	427.090	374.729	-304.161	193.735	-1884.395	-592.321	-505.205	7.132
	3800.00	58.058	428.638	376.128	-298.355	199.541	-1927.181	-595.226	-502.811	6.912
	3900.00	58.061	430.147	377.494	-292.549	205.347	-1970.121	-598.145	-500.341	6.701
	4000.00	58.064	431.617	378.828	-286.743	211.153	-2013.209	-601.076	-497.796	6.501

References

Phase	H / S	C _p
GAS	Nb1	Pa1

407.845

THORIUM DIBROMIDE OXIDE

ThOBr2

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	93.460	130.959	130.959	-1187.398	0.000	-1226.443	-1187.398	-1134.562	198.771
	300.00	93.588	131.538	130.961	-1187.225	0.173	-1226.686	-1187.443	-1134.234	197.488
	400.00	98.536	159.216	134.701	-1177.592	9.806	-1241.278	-1216.578	-1110.410	145.005
	500.00	101.482	181.542	141.909	-1167.582	19.816	-1258.352	-1214.717	-1084.081	113.253
	600.00	103.639	200.242	150.114	-1157.321	30.077	-1277.467	-1212.810	-1058.132	92.119
	700.00	105.425	216.356	158.453	-1146.866	40.532	-1298.315	-1210.900	-1032.504	77.046
	800.00	107.012	230.539	166.595	-1136.243	51.155	-1320.674	-1209.003	-1007.149	65.760
	900.00	108.483	243.229	174.417	-1125.467	61.931	-1344.373	-1207.124	-982.030	56.996
	1000.00	109.883	254.731	181.882	-1114.549	72.849	-1369.280	-1205.266	-957.119	49.995
	1100.00	111.236	265.268	188.990	-1103.492	83.906	-1395.287	-1203.428	-932.394	44.276
	1200.00	112.558	275.004	195.757	-1092.302	95.096	-1422.307	-1201.610	-907.835	39.517
	1300.00	113.856	284.065	202.206	-1080.982	106.416	-1450.266	-1199.812	-883.426	35.497
	1400.00	115.139	292.549	208.359	-1069.532	117.866	-1479.101	-1198.033	-859.156	32.055
	1500.00	116.409	300.536	214.241	-1057.954	129.444	-1508.759	-1196.273	-835.012	29.078

References

Phase	H / S	C _p
SOL	Nb1/Ra3	Ra3

318.943

THORIUM DICHLORIDE OXIDE

ThOCl2

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	91.265	123.399	123.399	-1232.201	0.000	-1268.992	-1232.201	-1155.970	202.521
	300.00	91.414	123.964	123.400	-1232.032	0.169	-1269.221	-1232.173	-1155.497	201.190
	400.00	97.030	151.124	127.065	-1222.578	9.623	-1283.027	-1230.472	-1130.188	147.587
	500.00	100.232	173.145	134.149	-1212.703	19.498	-1299.276	-1228.625	-1105.329	115.473
	600.00	102.483	191.628	142.230	-1202.562	29.639	-1317.539	-1226.755	-1080.846	94.096
	700.00	104.286	207.565	150.451	-1192.221	39.980	-1337.517	-1224.900	-1056.675	78.850
	800.00	105.850	221.595	158.484	-1181.713	50.488	-1358.989	-1223.075	-1032.768	67.433
	900.00	107.274	234.145	166.206	-1171.056	61.145	-1381.786	-1221.283	-1009.087	58.566
	1000.00	108.612	245.518	173.577	-1160.261	71.940	-1405.778	-1219.524	-985.604	51.483
	1100.00	109.894	255.930	180.597	-1149.335	82.866	-1430.858	-1217.798	-962.296	45.696

References

Phase	H / S	C _p	Remarks
SOL	Nb1	K3	K3 DEC. 2ThOCl2 = ThO2+ThCl4

ThOF2

THORIUM DIFLUORIDE OXIDE

286.034

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	86.252	104.600	104.600	-1665.199	0.000	-1696.385	-1665.199	-1589.422	278.460
	300.00	86.399	105.134	104.602	-1665.039	0.160	-1696.579	-1665.175	-1588.952	276.661
	400.00	92.157	130.862	108.070	-1656.082	9.117	-1708.427	-1663.718	-1563.757	204.206
	500.00	95.730	151.833	114.791	-1646.678	18.521	-1722.594	-1662.134	-1538.950	160.773
	600.00	98.443	169.535	122.477	-1636.964	28.235	-1738.685	-1660.529	-1514.463	131.846
	700.00	100.750	184.887	130.320	-1627.002	38.197	-1756.423	-1658.926	-1490.246	111.204
	800.00	102.841	198.479	138.007	-1616.821	48.378	-1775.604	-1657.330	-1466.258	95.737
	900.00	104.805	210.706	145.416	-1606.438	58.761	-1796.074	-1655.734	-1442.470	83.719
	1000.00	106.692	221.846	152.510	-1595.863	69.336	-1817.709	-1654.133	-1418.859	74.114
	1100.00	108.528	232.102	159.286	-1585.102	80.097	-1840.414	-1652.524	-1395.410	66.262
	1200.00	110.328	241.622	165.755	-1574.159	91.040	-1864.105	-1650.902	-1372.107	59.726
	1300.00	112.105	250.523	171.937	-1563.037	102.162	-1888.717	-1649.264	-1348.941	54.201
	1400.00	113.863	258.896	177.852	-1551.738	113.461	-1914.192	-1647.608	-1325.901	49.470
	1500.00	115.609	266.811	183.522	-1540.265	124.934	-1940.481	-1645.931	-1302.980	45.374

References

Phase	H / S	C _p
SOL	Nb1	Ra3

ThOI2

THORIUM DIIODIDE OXIDE

501.846

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	94.194	159.000	159.000	-1000.800	0.000	-1048.206	-1000.800	-967.078	169.428
	300.00	94.320	159.583	159.002	-1000.626	0.174	-1048.501	-1000.804	-966.869	168.347
	400.00	99.164	187.458	162.770	-990.925	9.875	-1065.908	-1017.028	-954.970	124.706
	500.00	102.005	209.912	170.026	-980.857	19.943	-1085.813	-1059.611	-935.370	97.717
	600.00	104.058	228.699	178.282	-970.549	30.251	-1107.769	-1057.690	-910.702	79.284
	700.00	105.739	244.869	186.666	-960.057	40.743	-1131.466	-1055.771	-886.356	66.141
	800.00	107.221	259.087	194.847	-949.408	51.392	-1156.678	-1053.871	-862.284	56.301
	900.00	108.588	271.796	202.704	-938.617	62.183	-1183.233	-1052.000	-838.449	48.662
	1000.00	109.883	283.304	210.197	-927.693	73.107	-1210.997	-1050.159	-814.820	42.562
	1100.00	111.132	293.836	217.329	-916.642	84.158	-1239.862	-1048.348	-791.374	37.579
	1200.00	112.348	303.558	224.115	-905.468	95.332	-1269.738	-1046.568	-768.091	33.434
	1300.00	113.543	312.598	230.577	-894.173	106.627	-1300.551	-1044.818	-744.956	29.933
	1400.00	114.721	321.056	236.741	-882.760	118.040	-1332.238	-1043.098	-721.954	26.936
	1500.00	115.886	329.010	242.630	-871.229	129.571	-1364.745	-1041.408	-699.075	24.344

References

Phase	H / S	C _p
SOL	Nb1	Ra3

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	46.025	71.099	71.099	–348.100	0.000	–369.298	–348.100	–341.135	59.766
	300.00	46.154	71.384	71.100	–348.015	0.085	–369.430	–348.109	–341.092	59.389
	400.00	50.888	85.396	72.978	–343.133	4.967	–377.291	–349.280	–338.501	44.204
	500.00	53.371	97.042	76.660	–337.909	10.191	–386.430	–349.616	–335.765	35.077
	600.00	54.968	106.923	80.902	–332.487	15.613	–396.641	–349.882	–332.969	28.988
	700.00	56.148	115.489	85.244	–326.929	21.171	–407.771	–350.139	–330.130	24.635
	800.00	57.104	123.050	89.507	–321.265	26.835	–419.705	–350.417	–327.253	21.367
	900.00	57.930	129.825	93.617	–315.512	32.588	–432.355	–350.734	–324.338	18.824
	1000.00	58.676	135.968	97.549	–309.682	38.418	–445.649	–351.100	–321.386	16.788
	1100.00	59.370	141.593	101.301	–303.779	44.321	–459.531	–351.521	–318.395	15.119
	1200.00	60.028	146.787	104.878	–297.809	50.291	–473.954	–415.573	–314.274	13.680
	1300.00	60.660	151.617	108.290	–291.774	56.326	–488.877	–415.342	–305.842	12.289
	1400.00	61.274	156.135	111.548	–285.677	62.423	–504.267	–415.180	–297.425	11.097
	1500.00	61.875	160.383	114.663	–279.520	68.580	–520.095	–415.089	–289.018	10.064
	1600.00	62.465	164.395	117.647	–273.303	74.797	–536.335	–415.070	–280.614	9.161
	1700.00	63.048	168.200	120.510	–267.027	81.073	–552.967	–417.938	–272.101	8.361
	1800.00	63.624	171.820	123.261	–260.693	87.407	–569.969	–418.083	–263.518	7.647
	1900.00	64.195	175.275	125.908	–254.303	93.797	–587.325	–418.174	–254.928	7.008
	2000.00	64.762	178.582	128.460	–247.855	100.245	–605.019	–418.210	–246.335	6.434
	2100.00	65.326	181.756	130.923	–241.350	106.750	–623.037	–434.312	–237.169	5.899
	2200.00	65.887	184.808	133.303	–234.790	113.310	–641.366	–434.239	–227.783	5.408
	2300.00	66.446	187.749	135.607	–228.173	119.927	–659.995	–434.113	–218.401	4.960
	2400.00	67.004	190.589	137.839	–221.500	126.600	–678.913	–433.932	–209.026	4.549
	2500.00	67.559	193.335	140.004	–214.772	133.328	–698.110	–433.697	–199.659	4.172
	2600.00	68.114	195.996	142.107	–207.989	140.111	–717.577	–433.408	–190.303	3.823
	2700.00	68.667	198.577	144.150	–201.150	146.950	–737.306	–433.066	–180.959	3.501
	2800.00	69.219	201.084	146.139	–194.255	153.845	–757.290	–432.670	–171.629	3.202
	2900.00	69.770	203.522	148.076	–187.306	160.794	–777.521	–432.220	–162.314	2.924
	3000.00	70.321	205.897	149.964	–180.301	167.799	–797.992	–431.717	–153.016	2.664
	3100.00	70.871	208.212	151.806	–173.242	174.858	–818.698	–431.160	–143.735	2.422
	3200.00	71.420	210.471	153.604	–166.127	181.973	–839.633	–430.549	–134.472	2.195
	3223.00	71.547	210.982	154.012	–164.483	183.617	–844.479	–430.401	–132.345	2.145

References

Phase	H / S	C _p	Remarks
SOL	Nb1,Ra3	e	Ra3 MPT 3223.

Th3P4

TRITHORIUM TETRAPHOSPHIDE

820.009

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
SOL	298.15	163.148	221.999	221.999	-1142.002	0.000	-1208.191	-1142.002	-1111.458	194.723
	300.00	163.575	223.009	222.002	-1141.700	0.302	-1208.603	-1142.028	-1111.269	193.489
	400.00	179.090	272.481	228.642	-1124.466	17.536	-1233.459	-1146.203	-1100.088	143.657
	500.00	187.067	313.381	241.622	-1106.122	35.880	-1262.813	-1147.173	-1088.439	113.708
	600.00	192.076	347.960	256.538	-1087.149	54.853	-1295.925	-1147.896	-1076.622	93.728
	700.00	195.685	377.852	271.782	-1067.753	74.249	-1332.249	-1148.577	-1064.689	79.448
	800.00	198.547	404.175	286.718	-1048.037	93.965	-1371.377	-1149.320	-1052.656	68.731
	900.00	200.975	427.704	301.099	-1028.058	113.944	-1412.991	-1150.181	-1040.523	60.390
	1000.00	203.133	448.992	314.841	-1007.851	134.151	-1456.843	-1151.196	-1028.285	53.712
	1100.00	205.115	468.447	327.934	-987.437	154.565	-1502.729	-1152.387	-1015.938	48.243
	1200.00	206.978	486.375	340.400	-966.832	175.170	-1550.482	-1408.051	-999.117	43.490
	1300.00	208.755	503.013	352.276	-946.044	195.958	-1599.961	-1406.531	-965.102	38.778
	1400.00	210.472	518.546	363.604	-925.083	216.919	-1651.047	-1405.239	-931.196	34.743
	1500.00	212.143	533.125	374.424	-903.952	238.050	-1703.638	-1404.174	-897.375	31.249
	1600.00	213.779	546.868	384.777	-882.655	259.347	-1757.645	-1403.341	-863.616	28.194
	1700.00	215.389	559.877	394.697	-861.197	280.805	-1812.988	-1411.188	-829.577	25.490
	1800.00	216.978	572.233	404.220	-839.578	302.424	-1869.598	-1410.882	-795.373	23.081
	1900.00	218.551	584.007	413.375	-817.801	324.201	-1927.415	-1410.429	-761.189	20.927
	2000.00	220.110	595.257	422.190	-795.868	346.134	-1986.382	-1409.829	-727.034	18.988
	2100.00	221.658	606.034	430.690	-773.780	368.222	-2046.451	-1457.444	-691.195	17.193
	2200.00	223.197	616.381	438.897	-751.537	390.465	-2107.575	-1456.551	-654.727	15.545
	2300.00	224.729	626.336	446.831	-729.141	412.861	-2169.714	-1455.512	-618.303	14.042
	2400.00	226.255	635.933	454.512	-706.591	435.411	-2232.830	-1454.327	-581.928	12.665
	2500.00	227.775	645.200	461.955	-683.890	458.112	-2296.889	-1452.997	-545.605	11.400
	2600.00	229.291	654.163	469.176	-661.036	480.966	-2361.860	-1451.521	-509.338	10.233
	2700.00	230.803	662.845	476.189	-638.032	503.970	-2427.712	-1449.901	-473.130	9.153
	2800.00	232.312	671.266	483.006	-614.876	527.126	-2494.420	-1448.135	-436.985	8.152
	2900.00	233.818	679.444	489.640	-591.569	550.433	-2561.957	-1446.225	-400.906	7.221
	3000.00	235.322	687.396	496.100	-568.112	573.890	-2630.301	-1444.170	-364.895	6.353
	3100.00	236.824	695.137	502.396	-544.505	597.497	-2699.430	-1441.971	-328.955	5.543
	3200.00	238.323	702.680	508.538	-520.748	621.254	-2769.322	-1439.627	-293.088	4.784
	3300.00	239.821	710.036	514.533	-496.840	645.162	-2839.959	-1437.138	-257.297	4.073
	3400.00	241.318	717.218	520.389	-472.783	669.219	-2911.323	-1434.505	-221.584	3.404
	3500.00	242.813	724.234	526.113	-448.577	693.425	-2983.397	-1431.728	-185.949	2.775

References

Phase	H / S	C _p
SOL	Nb1	e

604.452

THORIUM 2–RHENIUM

ThRe2

Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	77.984	123.637	123.637	–174.054	0.000	–210.916	–174.054	–173.218	30.347
	300.00	78.027	124.120	123.639	–173.910	0.144	–211.146	–174.054	–173.213	30.159
	400.00	80.383	146.889	126.727	–165.989	8.065	–224.745	–174.054	–172.933	22.583
	500.00	82.739	165.079	132.638	–157.833	16.221	–240.373	–174.054	–172.653	18.037
	600.00	85.094	180.373	139.352	–149.441	24.613	–257.665	–174.054	–172.372	15.006
	700.00	87.450	193.667	146.182	–140.814	33.240	–276.381	–174.056	–172.092	12.842
	800.00	89.805	205.498	152.870	–131.951	42.103	–296.350	–174.058	–171.811	11.218
	900.00	92.161	216.212	159.322	–122.853	51.201	–317.444	–174.060	–171.530	9.955
	1000.00	94.517	226.044	165.509	–113.519	60.535	–339.563	–174.063	–171.249	8.945
	1100.00	96.872	235.162	171.431	–103.950	70.104	–362.629	–174.067	–170.968	8.119
	1200.00	99.228	243.692	177.101	–94.145	79.909	–386.576	–174.071	–170.686	7.430
	1300.00	101.583	251.728	182.536	–84.104	89.950	–411.351	–174.076	–170.403	6.847
	1400.00	103.939	259.342	187.752	–73.828	100.226	–436.907	–174.081	–170.121	6.347
	1500.00	106.295	266.594	192.769	–63.317	110.737	–463.207	–174.087	–169.838	5.914

References

Phase	H / S	C _p
SOL	Ku1	e

264.104

THORIUM MONOSULFIDE

ThS

Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	47.719	69.789	69.789	–395.401	0.000	–416.209	–395.401	–390.734	68.455
	300.00	47.778	70.084	69.790	–395.313	0.088	–416.338	–395.405	–390.705	68.028
	400.00	50.067	84.179	71.696	–390.408	4.993	–424.079	–397.883	–389.011	50.800
	500.00	51.420	95.506	75.363	–385.329	10.072	–433.082	–399.634	–386.614	40.389
	600.00	52.404	104.972	79.530	–380.136	15.265	–443.119	–401.072	–383.867	33.419
	700.00	53.215	113.113	83.760	–374.854	20.547	–454.033	–402.282	–380.903	28.423
	800.00	53.932	120.266	87.885	–369.496	25.905	–465.709	–403.593	–377.762	24.665
	900.00	54.596	126.657	91.844	–364.069	31.332	–478.061	–457.810	–373.295	21.665
	1000.00	55.226	132.442	95.619	–358.578	36.823	–491.020	–457.718	–363.910	19.009
	1100.00	55.834	137.734	99.211	–353.025	42.376	–504.533	–457.698	–354.531	16.835
	1200.00	56.427	142.618	102.627	–347.412	47.989	–518.553	–457.751	–345.150	15.024
	1300.00	57.010	147.158	105.880	–341.740	53.661	–533.045	–457.879	–335.762	13.491
	1400.00	57.586	151.404	108.981	–336.010	59.391	–547.975	–458.081	–326.361	12.177
	1500.00	58.155	155.396	111.944	–330.223	65.178	–563.317	–458.358	–316.943	11.037
	1600.00	58.720	159.168	114.779	–324.379	71.022	–579.047	–458.709	–307.505	10.039
	1700.00	59.282	162.744	117.496	–318.479	76.922	–595.144	–461.952	–297.933	9.154
	1800.00	59.842	166.149	120.105	–312.523	82.878	–611.590	–462.475	–288.270	8.365
	1900.00	60.399	169.399	122.615	–306.510	88.891	–628.369	–462.946	–278.578	7.659
	2000.00	60.955	172.511	125.032	–300.443	94.958	–645.465	–463.365	–268.864	7.022

References

Phase	H / S	C _p	Remarks
SOL	Nb1/Ra3	Ra3	Ra3 MPT= 2600. (approx.)

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
SOL	298.15	74.667	96.232	96.232	-626.002	0.000	-654.694	-626.002	-619.661	108.562
	300.00	74.684	96.694	96.233	-625.864	0.138	-654.872	-625.999	-619.622	107.886
	400.00	75.647	118.311	99.174	-618.347	7.655	-665.672	-630.445	-617.326	80.615
	500.00	76.609	135.295	104.760	-610.735	15.267	-678.382	-633.565	-613.732	64.116
	600.00	77.571	149.347	111.053	-603.025	22.977	-692.634	-636.063	-609.515	53.063
	700.00	78.534	161.377	117.403	-595.220	30.782	-708.184	-638.059	-604.930	45.140
	800.00	79.496	171.927	123.572	-587.319	38.683	-724.860	-640.187	-600.057	39.180
	900.00	80.458	181.345	129.478	-579.321	46.681	-742.532	-748.039	-592.598	34.393
	1000.00	81.421	189.872	135.097	-571.227	54.775	-761.099	-747.179	-575.373	30.054
	1100.00	82.383	197.678	140.437	-563.037	62.965	-780.482	-746.365	-558.232	26.508
	1200.00	83.345	204.887	145.511	-554.750	71.252	-800.615	-745.594	-541.164	23.556
	1300.00	84.308	211.596	150.339	-546.368	79.634	-821.443	-744.864	-524.158	21.061
	1400.00	85.270	217.879	154.942	-537.889	88.113	-842.920	-744.176	-507.207	18.924
	1500.00	86.232	223.795	159.337	-529.314	96.688	-865.007	-743.529	-490.303	17.074
	1600.00	87.195	229.391	163.542	-520.643	105.359	-887.669	-742.921	-473.441	15.456
	1700.00	88.157	234.706	167.573	-511.875	114.127	-910.876	-745.169	-456.508	14.027
	1800.00	89.119	239.772	171.444	-503.011	122.991	-934.602	-744.661	-439.542	12.755
	1900.00	90.082	244.617	175.169	-494.051	131.951	-958.823	-744.065	-422.607	11.618
	2000.00	91.044	249.262	178.758	-484.995	141.007	-983.518	-743.380	-405.705	10.596
	2100.00	92.006	253.727	182.222	-475.842	150.160	-1008.669	-758.727	-388.268	9.658
	2188.00	92.853	257.521	185.175	-467.709	158.293	-1031.165	-757.973	-372.759	8.899

References

Phase	H / S	C _p	Remarks
SOL	Nb1,Ra3	e	Ra3 MPT= 2188.

560.274

DITHORIUM TRISULFIDE

Th2S3

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
SOL	298.15	122.218	180.000	180.000	–1083.999	0.000	–1137.666	–1083.999	–1077.158	188.714
	300.00	122.298	180.756	180.002	–1083.773	0.226	–1138.000	–1084.000	–1077.116	187.543
	400.00	125.635	216.434	184.844	–1071.363	12.636	–1157.937	–1090.936	–1074.523	140.318
	500.00	127.989	244.732	194.088	–1058.677	25.322	–1181.043	–1095.813	–1069.925	111.774
	600.00	129.955	268.245	204.543	–1045.778	38.221	–1206.725	–1099.751	–1064.353	92.660
	700.00	131.739	288.413	215.117	–1032.692	51.307	–1234.581	–1102.959	–1058.198	78.964
	800.00	133.425	306.115	225.408	–1019.433	64.566	–1264.325	–1106.399	–1051.575	68.661
	900.00	135.055	321.925	235.269	–1006.009	77.990	–1295.741	–1268.468	–1041.042	60.420
	1000.00	136.649	336.237	244.662	–992.424	91.575	–1328.661	–1267.515	–1015.824	53.061
	1100.00	138.221	349.335	253.590	–978.680	105.319	–1362.948	–1266.681	–990.696	47.044
	1200.00	139.777	361.429	262.079	–964.780	119.219	–1398.494	–1265.963	–965.640	42.033
	1300.00	141.322	372.678	270.159	–950.725	133.274	–1435.206	–1265.361	–940.638	37.795
	1400.00	142.859	383.207	277.862	–936.516	147.483	–1473.006	–1264.874	–915.678	34.164
	1500.00	144.390	393.116	285.218	–922.153	161.846	–1511.827	–1264.503	–890.749	31.019
	1600.00	145.916	402.483	292.257	–907.638	176.361	–1551.611	–1264.247	–865.841	28.267
	1700.00	147.439	411.375	299.005	–892.970	191.029	–1592.307	–1269.737	–840.728	25.832
	1800.00	148.960	419.845	305.485	–878.150	205.849	–1633.872	–1269.752	–815.491	23.665
	1900.00	150.478	427.940	311.718	–863.178	220.821	–1676.264	–1269.627	–790.258	21.726
	2000.00	151.994	435.697	317.725	–848.055	235.944	–1719.448	–1269.362	–765.034	19.981
	2100.00	153.509	443.149	323.521	–832.779	251.220	–1763.393	–1301.198	–738.682	18.374
	2200.00	155.023	450.326	329.123	–817.353	266.646	–1808.069	–1300.653	–711.908	16.903
	2270.00	156.082	455.198	332.936	–806.464	277.535	–1839.763	–1300.188	–693.182	15.951

References

Phase	H / S	C _p	Remarks
SOL	Nb1	e	Ra3 MPT 2230.

424.165

THORIUM DISULFATE

Th(SO4)2

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
SOL	298.15	173.460	159.000	159.000	–2542.600	0.000	–2590.006	–2542.600	–2310.315	404.758
	300.00	173.887	160.075	159.004	–2542.279	0.321	–2590.301	–2542.631	–2308.874	402.011
	400.00	196.983	213.262	166.100	–2523.735	18.865	–2609.040	–2547.935	–2230.602	291.287
	500.00	220.078	259.698	180.263	–2502.882	39.718	–2632.731	–2550.050	–2151.034	224.717
	600.00	243.174	301.865	197.064	–2479.720	62.880	–2660.838	–2549.733	–2071.214	180.315
	700.00	266.270	341.085	214.867	–2454.247	88.353	–2693.007	–2547.081	–1991.643	148.618
	800.00	289.365	378.148	232.980	–2426.466	116.134	–2728.984	–2542.676	–1912.577	124.878
	900.00	312.461	413.564	251.091	–2396.374	146.226	–2768.582	–2642.056	–1831.860	106.318
	1000.00	335.557	447.680	269.053	–2363.973	178.627	–2811.653	–2630.737	–1742.427	91.015
	1100.00	358.652	480.745	286.802	–2329.263	213.337	–2858.083	–2617.439	–1654.223	78.553

References

Phase	H / S	C _p
SOL	Nb1	Ra3

Ti

TITANIUM

47.880

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
SOL-A	298.15	25.051	30.759	30.759	0.000	0.000	-9.171	0.000	0.000	0.000
	300.00	25.088	30.914	30.759	0.046	0.046	-9.228	0.000	0.000	0.000
	400.00	26.535	38.352	31.764	2.635	2.635	-12.706	0.000	0.000	0.000
	500.00	27.438	44.374	33.703	5.336	5.336	-16.851	0.000	0.000	0.000
	600.00	28.270	49.450	35.915	8.121	8.121	-21.549	0.000	0.000	0.000
	700.00	29.197	53.876	38.171	10.993	10.993	-26.720	0.000	0.000	0.000
	800.00	30.244	57.841	40.386	13.964	13.964	-32.309	0.000	0.000	0.000
	900.00	31.372	61.468	42.530	17.045	17.045	-38.277	0.000	0.000	0.000
	1000.00	32.512	64.833	44.594	20.239	20.239	-44.594	0.000	0.000	0.000
	1100.00	33.578	67.983	46.578	23.545	23.545	-51.236	0.000	0.000	0.000
	1166.00	34.195	69.957	47.846	25.782	25.782	-55.789	0.000	0.000	0.000
SOL-B			3.578		4.172					
	1166.00	29.386	73.536	47.846	29.954	29.954	-55.789	0.000	0.000	0.000
	1200.00	29.574	74.383	48.586	30.956	30.956	-58.303	0.000	0.000	0.000
	1300.00	30.169	76.773	50.663	33.943	33.943	-65.862	0.000	0.000	0.000
	1400.00	30.824	79.032	52.610	36.992	36.992	-73.654	0.000	0.000	0.000
	1500.00	31.548	81.183	54.444	40.110	40.110	-81.665	0.000	0.000	0.000
	1600.00	32.347	83.244	56.180	43.304	43.304	-89.887	0.000	0.000	0.000
	1700.00	33.217	85.231	57.830	46.581	46.581	-98.312	0.000	0.000	0.000
	1800.00	34.145	87.156	59.406	49.949	49.949	-106.932	0.000	0.000	0.000
	1900.00	35.104	89.028	60.916	53.412	53.412	-115.741	0.000	0.000	0.000
	1939.00	35.480	89.745	61.489	54.788	54.788	-119.227	0.000	0.000	0.000
LIQ			7.296		14.146					
	1939.00	35.564	97.040	61.489	68.934	68.934	-119.227	0.000	0.000	0.000
	2000.00	35.564	98.142	62.590	71.103	71.103	-125.180	0.000	0.000	0.000
	2100.00	35.564	99.877	64.325	74.660	74.660	-135.082	0.000	0.000	0.000
	2200.00	35.564	101.531	65.979	78.216	78.216	-145.153	0.000	0.000	0.000
	2300.00	35.564	103.112	67.559	81.773	81.773	-155.386	0.000	0.000	0.000
	2400.00	35.564	104.626	69.072	85.329	85.329	-165.773	0.000	0.000	0.000
	2500.00	35.564	106.078	70.524	88.885	88.885	-176.309	0.000	0.000	0.000
	2600.00	35.564	107.473	71.918	92.442	92.442	-186.987	0.000	0.000	0.000
	2700.00	35.564	108.815	73.260	95.998	95.998	-197.802	0.000	0.000	0.000
	2800.00	35.564	110.108	74.553	99.555	99.555	-208.748	0.000	0.000	0.000
	2900.00	35.564	111.356	75.801	103.111	103.111	-219.822	0.000	0.000	0.000
	3000.00	35.564	112.562	77.006	106.667	106.667	-231.018	0.000	0.000	0.000
	3100.00	35.564	113.728	78.172	110.224	110.224	-242.333	0.000	0.000	0.000
	3200.00	35.564	114.857	79.301	113.780	113.780	-253.763	0.000	0.000	0.000
	3300.00	35.564	115.951	80.395	117.337	117.337	-265.303	0.000	0.000	0.000
	3400.00	35.564	117.013	81.456	120.893	120.893	-276.952	0.000	0.000	0.000
	3500.00	35.564	118.044	82.487	124.449	124.449	-288.705	0.000	0.000	0.000
	3600.00	35.564	119.046	83.489	128.006	128.006	-300.560	0.000	0.000	0.000
	3630.96	35.564	119.350	83.793	129.107	129.107	-304.249	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL-A	Ja2	Ja1	
SOL-B	Ja2	Ja1	
LIQ	Ja2	Ja1	Ja2 BPT= 3630.956, L= 409.984 kJ

47.880

TITANIUM (GAS)

Ti[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	24.432	180.297	180.297	473.630	0.000	419.874	473.630	429.045	-75.167
	300.00	24.398	180.448	180.297	473.675	0.045	419.541	473.629	428.769	-74.655
	400.00	23.086	187.265	181.236	476.042	2.412	401.136	473.406	413.841	-54.042
	500.00	22.370	192.333	182.970	478.311	4.681	382.145	472.976	398.996	-41.683
	600.00	21.921	196.369	184.878	480.524	6.894	362.703	472.404	384.252	-33.452
	700.00	21.629	199.724	186.766	482.701	9.071	342.894	471.708	369.614	-27.581
	800.00	21.446	202.600	188.570	484.854	11.224	322.774	470.890	355.083	-23.185
	900.00	21.349	205.119	190.271	486.993	13.363	302.386	469.948	340.662	-19.772
	1000.00	21.327	207.367	191.871	489.126	15.496	281.759	468.887	326.353	-17.047
	1100.00	21.376	209.401	193.373	491.261	17.631	260.919	467.716	312.156	-14.823
	1200.00	21.481	211.265	194.788	493.403	19.773	239.885	462.447	298.188	-12.980
	1300.00	21.659	212.991	196.122	495.559	21.929	218.671	461.617	284.533	-11.433
	1400.00	21.911	214.605	197.385	497.737	24.107	197.290	460.746	270.944	-10.109
	1500.00	22.230	216.127	198.585	499.944	26.314	175.753	459.834	257.418	-8.964
	1600.00	22.608	217.574	199.727	502.185	28.555	154.067	458.881	243.955	-7.964
	1700.00	23.035	218.957	200.817	504.467	30.837	132.240	457.886	230.552	-7.084
	1800.00	23.504	220.287	201.862	506.794	33.164	110.278	456.844	217.209	-6.303
	1900.00	24.007	221.571	202.866	509.169	35.539	88.185	455.757	203.926	-5.606
	2000.00	24.537	222.815	203.832	511.596	37.966	65.965	440.493	191.145	-4.992
	2100.00	25.089	224.026	204.765	514.077	40.447	43.623	439.417	178.705	-4.445
	2200.00	25.659	225.206	205.668	516.614	42.984	21.161	438.398	166.314	-3.949
	2300.00	26.243	226.360	206.542	519.209	45.579	-1.418	437.437	153.968	-3.497
	2400.00	26.837	227.489	207.392	521.863	48.233	-24.110	436.534	141.663	-3.083
	2500.00	27.439	228.597	208.218	524.577	50.947	-46.915	435.692	129.394	-2.704
	2600.00	28.046	229.685	209.023	527.351	53.721	-69.829	434.909	117.158	-2.354
	2700.00	28.656	230.755	209.808	530.186	56.556	-92.851	434.188	104.951	-2.030
	2800.00	29.269	231.808	210.575	533.083	59.453	-115.979	433.528	92.769	-1.731
	2900.00	29.881	232.846	211.325	536.040	62.410	-139.212	432.929	80.610	-1.452
	3000.00	30.492	233.869	212.059	539.059	65.429	-162.548	432.391	68.470	-1.192
	3100.00	31.101	234.879	212.779	542.138	68.508	-185.985	431.915	56.348	-0.949
	3200.00	31.706	235.876	213.485	545.279	71.649	-209.523	431.499	44.239	-0.722
	3300.00	32.308	236.860	214.179	548.479	74.849	-233.160	431.143	32.143	-0.509
	3400.00	32.905	237.834	214.860	551.740	78.110	-256.895	430.847	20.057	-0.308
	3500.00	33.497	238.796	215.530	555.060	81.430	-280.727	430.611	7.978	-0.119
	3600.00	34.083	239.748	216.190	558.439	84.809	-304.654	430.434	-4.094	0.059
	3700.00	34.662	240.690	216.839	561.877	88.247	-328.676	0.000	0.000	0.000
	3800.00	35.235	241.622	217.479	565.371	91.741	-352.791	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Ja2	Ja1

Ti3(AsO4)2

TRITITANIUM DIARSENATE

357.481

Phase	T [K]	C _p [————— J / (K mol)]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	264.486	339.364	339.364	-2617.259	0.000	-2718.440	-2617.259	-2547.307	446.278
	300.00	265.067	341.002	339.369	-2616.769	0.490	-2719.070	-2617.108	-2546.874	443.450
	400.00	288.320	420.753	350.085	-2588.992	28.267	-2757.293	-2608.053	-2524.783	329.703
	500.00	303.457	486.803	371.013	-2559.364	57.895	-2802.766	-2597.778	-2505.135	261.710
	600.00	315.399	543.217	395.125	-2528.404	88.855	-2854.334	-2586.737	-2487.633	216.568
	700.00	325.832	592.633	419.882	-2496.334	120.925	-2911.177	-2575.148	-2472.025	184.465
	800.00	335.461	636.777	444.283	-2463.264	153.995	-2972.685	-2563.130	-2458.109	160.498
	813.00	336.673	642.194	447.404	-2458.895	158.364	-2980.999	-2561.540	-2456.415	157.823

References

Phase	H / S	C _p
SOL	G1	G1

TiB

TITANIUM MONOBORIDE

58.691

Phase	T [K]	C _p [————— J / (K mol)]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	29.722	34.727	34.727	-160.247	0.000	-170.601	-160.247	-159.692	27.977
	300.00	30.021	34.912	34.728	-160.192	0.055	-170.665	-160.259	-159.688	27.804
	400.00	40.533	45.205	36.060	-156.589	3.658	-174.671	-160.610	-159.432	20.820
	500.00	45.396	54.832	38.869	-152.265	7.982	-179.682	-160.718	-159.124	16.624
	600.00	48.037	63.364	42.256	-147.582	12.665	-185.600	-160.800	-158.798	13.825
	700.00	49.628	70.898	45.820	-142.692	17.555	-192.321	-160.938	-158.454	11.824
	800.00	50.659	77.597	49.382	-137.675	22.572	-199.752	-161.174	-158.085	10.322
	900.00	51.365	83.607	52.856	-132.571	27.676	-207.818	-161.533	-157.678	9.151
	1000.00	51.869	89.046	56.208	-127.408	32.839	-216.455	-162.027	-157.225	8.213
	1100.00	52.241	94.008	59.422	-122.202	38.045	-225.611	-162.656	-156.715	7.442
	1200.00	52.523	98.566	62.497	-116.963	43.284	-235.243	-167.418	-156.023	6.792
	1300.00	52.742	102.780	65.435	-111.699	48.548	-245.313	-167.782	-155.060	6.230
	1400.00	52.915	106.695	68.244	-106.416	53.831	-255.789	-168.237	-154.065	5.748
	1500.00	53.054	110.350	70.931	-101.117	59.130	-266.643	-168.791	-153.033	5.329
	1600.00	53.167	113.778	73.503	-95.806	64.441	-277.851	-169.450	-151.962	4.961
	1700.00	53.260	117.004	75.968	-90.485	69.762	-289.392	-170.222	-150.846	4.635
	1800.00	53.338	120.051	78.333	-85.155	75.092	-301.246	-171.114	-149.681	4.344
	1900.00	53.403	122.936	80.605	-79.818	80.429	-313.397	-172.131	-148.463	4.082
	2000.00	53.458	125.677	82.791	-74.474	85.773	-325.829	-187.407	-146.744	3.833
	2100.00	53.505	128.286	84.896	-69.126	91.121	-338.528	-188.578	-144.682	3.599
	2200.00	53.545	130.776	86.925	-63.774	96.473	-351.482	-189.779	-142.563	3.385
	2300.00	53.580	133.157	88.884	-58.417	101.830	-364.680	-191.010	-140.390	3.188
	2400.00	53.610	135.438	90.776	-53.058	107.189	-378.110	-242.531	-137.093	2.984
	2500.00	53.636	137.627	92.607	-47.696	112.551	-391.764	-243.900	-132.672	2.772

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 DPT= 2500.

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [– –]
SOL	298.15	44.145	28.493	28.493	–323.800	0.000	–332.295	–323.800	–319.648	56.001
	300.00	44.431	28.767	28.494	–323.718	0.082	–332.348	–323.806	–319.622	55.651
	400.00	55.272	43.210	30.389	–318.672	5.128	–335.956	–324.079	–318.185	41.551
	500.00	61.486	56.261	34.284	–312.811	10.989	–340.942	–324.380	–316.678	33.083
	600.00	65.838	67.875	38.933	–306.435	17.365	–347.160	–324.750	–315.103	27.432
	700.00	69.275	78.290	43.825	–299.674	24.126	–354.477	–325.171	–313.463	23.391
	800.00	72.194	87.736	48.732	–292.597	31.203	–362.786	–325.632	–311.759	20.356
	900.00	74.784	96.391	53.553	–285.246	38.554	–371.998	–326.125	–309.996	17.992
	1000.00	77.143	104.394	58.242	–277.648	46.152	–382.042	–326.647	–308.176	16.097
	1100.00	79.329	111.850	62.781	–269.823	53.977	–392.859	–327.187	–306.303	14.545
	1200.00	81.375	118.842	67.164	–261.787	62.013	–404.397	–331.740	–304.261	13.244
	1300.00	83.304	125.432	71.395	–253.552	70.248	–416.614	–331.775	–301.970	12.133
	1400.00	85.128	131.673	75.480	–245.130	78.670	–429.472	–331.780	–299.677	11.181
	1500.00	86.858	137.606	79.425	–236.530	87.270	–442.938	–331.767	–297.384	10.356
	1600.00	88.500	143.264	83.240	–227.761	96.039	–456.984	–331.744	–295.092	9.634
	1700.00	90.059	148.677	86.931	–218.832	104.968	–471.583	–331.726	–292.802	8.997
	1800.00	91.538	153.866	90.506	–209.752	114.048	–486.711	–331.722	–290.513	8.430
	1900.00	92.941	158.854	93.973	–200.527	123.273	–502.349	–331.743	–288.223	7.924
	2000.00	94.268	163.655	97.338	–191.166	132.634	–518.476	–345.929	–285.486	7.456
	2100.00	95.522	168.285	100.607	–181.676	142.124	–535.074	–345.921	–282.464	7.026
	2200.00	96.704	172.756	103.785	–172.064	151.736	–552.128	–345.860	–279.444	6.635
	2300.00	97.814	177.079	106.879	–162.338	161.462	–569.621	–345.751	–276.427	6.278
	2400.00	98.853	181.265	109.891	–152.504	171.296	–587.539	–446.120	–271.278	5.904
	2500.00	99.823	185.320	112.828	–142.569	181.231	–605.869	–446.092	–263.994	5.516
	2600.00	100.722	189.253	115.692	–132.542	191.258	–624.599	–445.971	–256.712	5.157
	2700.00	101.553	193.070	118.487	–122.427	201.373	–643.716	–445.763	–249.436	4.826
	2800.00	102.315	196.777	121.218	–112.233	211.567	–663.209	–445.475	–242.170	4.518
	2900.00	103.007	200.380	123.885	–101.967	221.833	–683.068	–445.115	–234.915	4.231
	3000.00	103.632	203.883	126.494	–91.634	232.166	–703.282	–444.689	–227.674	3.964
	3100.00	104.188	207.290	129.046	–81.243	242.557	–723.841	–444.204	–220.448	3.715
	3193.00	104.644	210.376	131.370	–71.531	252.269	–743.263	–443.706	–213.743	3.497
			31.449		100.416					
LIQ	3193.00	108.784	241.825	131.370	28.885	352.685	–743.263	–343.290	–213.743	3.497
	3200.00	108.784	242.063	131.612	29.646	353.446	–744.957	–343.222	–213.459	3.484
	3300.00	108.784	245.411	135.010	40.525	364.325	–769.331	–342.250	–209.419	3.315
	3400.00	108.784	248.658	138.305	51.403	375.203	–794.036	–341.278	–205.408	3.156
	3500.00	108.784	251.812	141.503	62.281	386.081	–819.060	–340.306	–201.426	3.006

References

Phase	H / S	C _p	Remarks
SOL	Nb1	Ja1	
LIQ	Ja1	Ja1	NDPT= 4250. GAS(Ti + B)

TiBr[g]

TITANIUM MONOBROMIDE (GAS)

127.784

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
GAS	298.15	37.828	260.271	260.271	212.547	0.000	134.947	212.547	166.809	-29.224
	300.00	37.905	260.505	260.271	212.617	0.070	134.466	212.501	166.525	-28.995
	400.00	40.614	271.835	261.798	216.562	4.015	107.828	196.616	154.442	-20.168
	500.00	41.886	281.050	264.756	220.694	8.147	80.169	196.201	143.947	-15.038
	600.00	42.593	288.755	268.132	224.921	12.374	51.668	195.784	133.535	-11.625
	700.00	43.033	295.356	271.561	229.204	16.657	22.454	195.327	123.195	-9.193
	800.00	43.330	301.123	274.903	233.523	20.976	-7.376	194.801	112.925	-7.373
	900.00	43.545	306.240	278.106	237.867	25.320	-37.749	194.186	102.727	-5.962
	1000.00	43.708	310.836	281.153	242.230	29.683	-68.606	193.472	92.602	-4.837
	1100.00	43.838	315.008	284.044	246.608	34.061	-99.902	192.657	82.554	-3.920
	1200.00	43.945	318.827	286.786	250.997	38.450	-131.596	187.745	72.703	-3.165
	1300.00	44.036	322.349	289.388	255.396	42.849	-163.657	187.265	63.135	-2.537
	1400.00	44.115	325.615	291.860	259.804	47.257	-196.057	186.728	53.607	-2.000
	1500.00	44.185	328.661	294.213	264.219	51.672	-228.773	186.126	44.119	-1.536
	1600.00	44.249	331.515	296.456	268.640	56.093	-261.783	185.453	34.673	-1.132
	1700.00	44.308	334.199	298.598	273.068	60.521	-295.070	184.699	25.272	-0.777
	1800.00	44.363	336.733	300.647	277.502	64.955	-328.618	183.859	15.918	-0.462
	1900.00	44.415	339.133	302.610	281.941	69.394	-362.412	182.926	6.612	-0.182
	2000.00	44.464	341.413	304.494	286.385	73.838	-396.441	167.767	-2.196	0.057
	2100.00	44.511	343.583	306.304	290.834	78.287	-430.691	166.745	-10.669	0.265
	2200.00	44.556	345.655	308.046	295.287	82.740	-465.154	165.726	-19.094	0.453

References

Phase	H / S	C _p
GAS	Ja1	Ja1

TiBr2

TITANIUM DIBROMIDE

207.688

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
SOL	298.15	78.670	108.366	108.366	-405.430	0.000	-437.739	-405.430	-383.187	67.133
	300.00	78.691	108.852	108.367	-405.284	0.146	-437.940	-405.471	-383.049	66.695
	400.00	79.840	131.648	111.467	-397.358	8.072	-450.017	-434.615	-369.495	48.251
	500.00	80.989	149.587	117.360	-389.316	16.114	-464.110	-432.966	-353.406	36.920
	600.00	82.138	164.455	124.005	-381.160	24.270	-479.833	-431.313	-337.649	29.395
	700.00	83.287	177.203	130.715	-372.889	32.541	-496.931	-429.650	-322.169	24.041
	800.00	84.436	188.399	137.240	-364.503	40.927	-515.222	-427.982	-306.929	20.040
	900.00	85.585	198.411	143.490	-356.002	49.428	-534.571	-426.319	-291.897	16.941
	1000.00	86.734	207.487	149.443	-347.386	58.044	-554.873	-424.663	-277.050	14.472
	1100.00	87.883	215.808	155.103	-338.655	66.775	-576.043	-423.011	-262.369	12.459
	1200.00	89.032	223.504	160.486	-329.809	75.621	-598.014	-425.356	-247.719	10.783
	1208.00	89.124	224.096	160.906	-329.096	76.334	-599.804	-425.183	-246.535	10.660

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 SPT= 1208.0, L= 206.23 kJ

207.688		TITANIUM DIBROMIDE (GAS)								TiBr2[g]
Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	60.029	308.889	308.889	-179.075	0.000	-271.170	-179.075	-216.618	37.951
	300.00	60.051	309.260	308.890	-178.964	0.111	-271.742	-179.150	-216.851	37.757
	400.00	60.989	326.676	311.258	-172.908	6.167	-303.578	-210.165	-223.056	29.128
	500.00	61.497	340.346	315.757	-166.781	12.294	-336.954	-210.431	-226.250	23.636
	600.00	61.758	351.584	320.820	-160.617	18.458	-371.567	-210.770	-229.383	19.970
	700.00	61.902	361.116	325.913	-154.433	24.642	-407.214	-211.194	-232.453	17.346
	800.00	62.000	369.388	330.841	-148.238	30.837	-443.748	-211.718	-235.455	15.374
	900.00	62.088	376.696	335.538	-142.033	37.042	-481.059	-212.351	-238.385	13.836
	1000.00	62.191	383.242	339.987	-135.820	43.255	-519.062	-213.097	-241.239	12.601
	1100.00	62.318	389.176	344.193	-129.594	49.481	-557.687	-213.951	-244.013	11.587
	1200.00	62.477	394.605	348.171	-123.355	55.720	-596.880	-218.902	-246.585	10.734
	1300.00	62.672	399.613	351.938	-117.098	61.977	-636.594	-219.417	-248.872	10.000
	1400.00	62.902	404.266	355.511	-110.819	68.256	-676.791	-219.979	-251.117	9.369
	1500.00	63.169	408.614	358.908	-104.516	74.559	-717.437	-220.591	-253.320	8.821
	1600.00	63.472	412.701	362.144	-98.184	80.891	-758.505	-221.256	-255.480	8.341
	1700.00	63.809	416.558	365.232	-91.820	87.255	-799.970	-221.977	-257.598	7.915
	1800.00	64.178	420.216	368.186	-85.421	93.654	-841.810	-222.759	-259.671	7.535
	1900.00	64.578	423.697	371.017	-78.984	100.091	-884.007	-223.602	-261.699	7.195
	2000.00	65.006	427.020	373.735	-72.505	106.570	-926.544	-238.638	-263.236	6.875

References

Phase	H / S	C _p
GAS	Ja1	Ja1

287.592		TITANIUM TRIBROMIDE								TiBr3
Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	101.744	176.565	176.565	-550.196	0.000	-602.839	-550.196	-525.596	92.082
	300.00	101.734	177.194	176.567	-550.008	0.188	-603.166	-550.264	-525.443	91.488
	400.00	105.824	206.842	180.582	-539.692	10.504	-622.429	-594.261	-507.998	66.338
	500.00	114.701	231.357	188.344	-528.689	21.507	-644.368	-591.497	-486.737	50.849
	600.00	125.513	253.206	197.361	-516.689	33.507	-668.613	-587.859	-466.111	40.579
	700.00	137.209	273.425	206.799	-503.558	46.638	-694.955	-583.203	-446.173	33.294
	800.00	147.277	292.404	216.326	-489.334	60.862	-723.257	-577.571	-426.971	27.878
	900.00	151.879	310.014	225.771	-474.377	75.819	-753.390	-571.332	-408.518	23.710
	1000.00	156.674	326.263	235.018	-458.951	91.245	-785.214	-564.748	-390.777	20.412
	1066.30	159.959	336.424	241.010	-448.455	101.741	-807.185	-560.183	-379.390	18.585

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 SPT= 1066.3, L= 138.76 kJ

TiBr3[g]

TITANIUM TRIBROMIDE (GAS)

287.592

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
							kJ / mol			
GAS	298.15	79.332	359.097	359.097	-374.886	0.000	-481.951	-374.886	-404.708	70.903
	300.00	79.432	359.588	359.098	-374.739	0.147	-482.615	-374.995	-404.893	70.498
	400.00	83.115	383.014	362.267	-366.587	8.299	-519.793	-421.156	-405.362	52.935
	500.00	84.804	401.765	368.355	-358.181	16.705	-559.063	-420.988	-401.433	41.937
	600.00	85.599	417.306	375.256	-349.656	25.230	-600.039	-420.826	-397.538	34.609
	700.00	85.964	430.532	382.231	-341.075	33.811	-642.448	-420.720	-393.666	29.376
	800.00	86.113	442.023	389.003	-332.470	42.416	-686.088	-420.708	-389.803	25.452
	900.00	86.153	452.168	395.469	-323.856	51.030	-730.808	-420.810	-385.935	22.399
	1000.00	86.139	461.245	401.600	-315.241	59.645	-776.486	-421.038	-382.049	19.956
	1100.00	86.103	469.454	407.402	-306.629	68.257	-823.028	-421.391	-378.134	17.956
	1200.00	86.059	476.944	412.889	-298.021	76.865	-870.353	-425.863	-374.062	16.283
	1300.00	86.018	483.830	418.085	-289.417	85.469	-918.396	-425.925	-369.744	14.856
	1400.00	85.981	490.204	423.012	-280.817	94.069	-967.102	-426.061	-365.418	13.634
	1500.00	85.950	496.135	427.691	-272.221	102.665	-1016.422	-426.278	-361.079	12.574
	1600.00	85.921	501.681	432.144	-263.627	111.259	-1066.316	-426.582	-356.723	11.646
	1700.00	85.893	506.889	436.389	-255.036	119.850	-1116.747	-426.981	-352.345	10.826
	1800.00	85.860	511.797	440.443	-246.449	128.437	-1167.684	-427.481	-347.940	10.097
	1900.00	85.818	516.439	444.322	-237.865	137.021	-1219.098	-428.086	-343.506	9.444
	2000.00	85.761	520.839	448.039	-229.286	145.600	-1270.964	-442.933	-338.591	8.843

References

Phase	H / S	C _p
GAS	Ja1	Ja1

TiBr4

TITANIUM TETRABROMIDE

367.496

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
							kJ / mol			
SOL	298.15	131.504	243.509	243.509	-617.977	0.000	-690.579	-617.977	-590.646	103.479
	300.00	131.817	244.323	243.511	-617.733	0.244	-691.030	-618.060	-590.476	102.811
	311.40	133.751	249.275	243.632	-616.220	1.757	-693.844	-618.554	-589.418	98.870
LIQ			41.384		12.887					
	311.40	151.879	290.659	243.632	-603.333	14.644	-693.844	-605.667	-589.418	98.870
	400.00	151.879	328.688	258.436	-589.876	28.101	-721.351	-661.756	-573.013	74.828
	500.00	151.879	362.579	276.001	-574.688	43.289	-755.978	-656.653	-551.421	57.607
	503.50	151.879	363.638	276.607	-574.157	43.820	-757.248	-656.477	-550.685	57.130

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 MPT= 311.4
LIQ	Ja1	Ja1	Ja1 BPT= 503.5, L= 45.2 kJ

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	100.654	398.635	398.635	-550.196	0.000	-669.049	-550.196	-569.116	99.707
	300.00	100.742	399.258	398.637	-550.010	0.186	-669.787	-550.336	-569.233	99.112
	400.00	103.853	428.730	402.634	-539.758	10.438	-711.250	-611.637	-562.911	73.509
	500.00	105.301	452.077	410.270	-529.292	20.904	-755.331	-611.257	-550.774	57.539
	600.00	106.096	471.353	418.891	-518.719	31.477	-801.530	-610.905	-538.711	46.899
	700.00	106.582	487.747	427.585	-508.083	42.113	-849.506	-610.612	-526.703	39.303
	800.00	106.903	502.001	436.016	-497.408	52.788	-899.009	-610.403	-514.731	33.609
	900.00	107.128	514.606	444.061	-486.706	63.490	-949.851	-610.296	-502.780	29.181
	1000.00	107.294	525.902	451.690	-475.984	74.212	-1001.886	-610.301	-490.834	25.639
	1100.00	107.421	536.134	458.909	-465.248	84.948	-1054.996	-610.416	-478.883	22.740
	1200.00	107.522	545.486	465.740	-454.501	95.695	-1109.084	-614.639	-466.797	20.319
	1300.00	107.604	554.095	472.210	-443.744	106.452	-1164.069	-614.440	-454.486	18.261
	1400.00	107.673	562.072	478.347	-432.981	117.215	-1219.882	-614.309	-442.187	16.498
	1500.00	107.731	569.503	484.179	-422.210	127.986	-1276.465	-614.250	-429.895	14.970
	1600.00	107.782	576.458	489.732	-411.435	138.761	-1333.767	-614.274	-417.604	13.633
	1700.00	107.827	582.993	495.027	-400.654	149.542	-1391.742	-614.386	-405.310	12.454
	1800.00	107.868	589.158	500.087	-389.869	160.327	-1450.353	-614.595	-393.005	11.405
	1900.00	107.905	594.991	504.930	-379.081	171.115	-1509.563	-614.905	-380.687	10.466
	2000.00	107.939	600.526	509.573	-368.288	181.908	-1569.341	-629.451	-367.904	9.609
	2100.00	107.970	605.794	514.030	-357.493	192.703	-1629.659	-629.868	-354.817	8.826
	2200.00	108.000	610.817	518.316	-346.694	203.502	-1690.492	-630.291	-341.709	8.113

References

Phase	H / S	C _p
GAS	Ja1	Ja1

TiC

TITANIUM MONOCARBIDE

59.891

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [————— kJ / mol —————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	33.818	24.230	24.230	-184.502	0.000	-191.726	-184.502	-180.844	31.683
	300.00	33.937	24.439	24.230	-184.439	0.063	-191.771	-184.502	-180.821	31.484
	400.00	40.685	35.150	25.644	-180.700	3.802	-194.760	-184.388	-179.605	23.454
	500.00	45.168	44.757	28.525	-176.386	8.116	-198.765	-184.106	-178.441	18.642
	600.00	47.645	53.234	31.952	-171.733	12.769	-203.673	-183.818	-177.336	15.438
	700.00	49.033	60.692	35.536	-166.893	17.609	-209.377	-183.628	-176.272	13.154
	800.00	49.905	67.300	39.102	-161.943	22.559	-215.783	-183.574	-175.226	11.441
	900.00	50.570	73.217	42.569	-156.919	27.583	-222.814	-183.662	-174.179	10.109
	1000.00	51.179	78.577	45.906	-151.831	32.671	-230.408	-183.889	-173.115	9.043
	1100.00	51.795	83.484	49.102	-146.683	37.819	-238.515	-184.235	-172.021	8.169
	1200.00	52.446	88.018	52.159	-141.471	43.031	-247.092	-188.680	-170.773	7.434
	1300.00	53.145	92.243	55.081	-136.192	48.310	-256.108	-188.679	-169.281	6.802
	1400.00	53.894	96.209	57.879	-130.840	53.662	-265.532	-188.706	-167.788	6.260
	1500.00	54.690	99.954	60.560	-125.411	59.091	-275.342	-188.754	-166.292	5.791
	1600.00	55.529	103.510	63.134	-119.901	64.601	-285.517	-188.822	-164.793	5.380
	1700.00	56.405	106.903	65.610	-114.305	70.197	-296.039	-188.907	-163.288	5.017
	1800.00	57.316	110.152	67.995	-108.619	75.883	-306.893	-189.009	-161.779	4.695
	1900.00	58.255	113.276	70.296	-102.840	81.662	-318.065	-189.128	-160.263	4.406
	2000.00	59.221	116.289	72.521	-96.967	87.535	-329.544	-203.393	-158.295	4.134
	2100.00	60.209	119.202	74.675	-90.995	93.507	-341.320	-203.438	-156.039	3.881
	2200.00	61.216	122.026	76.763	-84.924	99.578	-353.382	-203.393	-153.782	3.651
	2300.00	62.241	124.770	78.791	-78.752	105.750	-365.722	-203.256	-151.530	3.441
	2400.00	63.282	127.441	80.763	-72.476	112.026	-378.333	-203.024	-149.286	3.249
	2500.00	64.336	130.045	82.682	-66.095	118.407	-391.208	-202.695	-147.053	3.073
	2600.00	65.402	132.589	84.553	-59.608	124.894	-404.340	-202.268	-144.835	2.910
	2700.00	66.478	135.078	86.379	-53.014	131.488	-417.724	-201.742	-142.636	2.759
	2800.00	67.564	137.515	88.161	-46.312	138.190	-431.354	-201.114	-140.458	2.620
	2900.00	68.659	139.905	89.905	-39.501	145.001	-445.225	-200.383	-138.304	2.491
	3000.00	69.761	142.251	91.611	-32.580	151.922	-459.334	-199.550	-136.178	2.371
	3100.00	70.869	144.557	93.281	-25.549	158.953	-473.674	-198.613	-134.080	2.259
	3200.00	71.983	146.824	94.919	-18.406	166.096	-488.244	-197.571	-132.015	2.155
	3290.00	72.989	148.835	96.367	-11.883	172.619	-501.548	-196.543	-130.185	2.067
			21.619		71.128					
LIQ	3290.00	62.760	170.454	96.367	59.245	243.747	-501.548	-125.415	-130.185	2.067
	3300.00	62.760	170.645	96.592	59.873	244.375	-503.254	-125.398	-130.200	2.061
	3400.00	62.760	172.518	98.797	66.149	250.651	-520.413	-125.235	-130.348	2.003
	3500.00	62.760	174.337	100.930	72.425	256.927	-537.756	-125.079	-130.501	1.948

References

Phase	H / S	C _p
SOL	Nb1	Ja1
LIQ	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—————]
GAS	298.15	36.879	249.225	249.225	154.390	0.000	80.084	154.390	122.516	–21.464
	300.00	36.968	249.453	249.226	154.458	0.068	79.622	154.381	122.318	–21.297
	400.00	40.101	260.582	250.721	158.334	3.944	54.101	153.934	111.700	–14.587
	500.00	41.557	269.704	253.634	162.425	8.035	27.573	153.539	101.188	–10.571
	600.00	42.354	277.358	256.968	166.624	12.234	0.209	153.135	90.755	–7.901
	700.00	42.840	283.926	260.361	170.886	16.496	–27.863	152.686	80.393	–5.999
	800.00	43.159	289.669	263.673	175.187	20.797	–56.548	152.163	70.100	–4.577
	900.00	43.382	294.766	266.850	179.514	25.124	–85.775	151.548	59.879	–3.475
	1000.00	43.545	299.345	269.874	183.861	29.471	–115.484	150.829	49.731	–2.598
	1100.00	43.669	303.502	272.745	188.222	33.832	–145.630	150.008	39.660	–1.883
	1200.00	43.767	307.306	275.469	192.594	38.204	–176.173	145.087	29.787	–1.297
	1300.00	43.845	310.812	278.055	196.975	42.585	–207.081	144.594	20.198	–0.812
	1400.00	43.910	314.064	280.512	201.363	46.973	–238.327	144.042	10.650	–0.397
	1500.00	43.965	317.095	282.851	205.756	51.366	–269.887	143.424	1.143	–0.040
	1600.00	44.012	319.934	285.081	210.155	55.765	–301.740	142.731	–8.320	0.272
	1700.00	44.053	322.604	287.210	214.559	60.169	–333.868	141.955	–17.738	0.545
	1800.00	44.090	325.123	289.247	218.966	64.576	–366.255	141.089	–27.107	0.787
	1900.00	44.122	327.507	291.199	223.376	68.986	–398.888	140.129	–36.425	1.001
	2000.00	44.152	329.771	293.071	227.790	73.400	–431.753	124.938	–45.246	1.182

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol)]		[—————]			[————— kJ / mol]			[-]
SOL	298.15	69.849	87.362	87.362	-515.469	0.000	-541.516	-515.469	-465.823	81.610
	300.00	69.930	87.794	87.363	-515.340	0.129	-541.678	-515.449	-465.515	81.053
	400.00	73.412	108.423	90.152	-508.161	7.308	-551.530	-514.326	-449.038	58.638
	500.00	75.992	125.092	95.526	-500.686	14.783	-563.232	-513.123	-432.853	45.220
	600.00	78.217	139.147	101.655	-492.974	22.495	-576.462	-511.831	-416.919	36.296
	700.00	80.274	151.360	107.902	-485.048	30.421	-591.000	-510.454	-401.208	29.939
	800.00	82.242	162.208	114.024	-476.922	38.547	-606.688	-509.004	-385.700	25.184
	900.00	84.158	172.006	119.931	-468.601	46.868	-623.407	-507.490	-370.377	21.496
	1000.00	86.041	180.971	125.593	-460.091	55.378	-641.062	-505.915	-355.226	18.555
	1100.00	87.904	189.259	131.009	-451.394	64.075	-659.579	-504.277	-340.236	16.156
	1200.00	89.752	196.987	136.188	-442.511	72.958	-678.895	-506.570	-325.278	14.159
	1300.00	91.590	204.243	141.147	-433.444	82.025	-698.960	-504.262	-310.264	12.467
	1400.00	93.421	211.098	145.901	-424.193	91.276	-719.730	-501.842	-295.431	11.023
	1500.00	95.246	217.606	150.466	-414.760	100.709	-741.168	-499.315	-280.775	9.777
	1580.40	96.710	222.617	154.010	-407.043	108.426	-758.866	-497.211	-269.116	8.895

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	SPT= 1580.4, L= 248.5 kJ

118.785

TITANIUM DICHLORIDE (GAS)

TiCl₂[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
GAS	298.15	57.506	278.345	278.345	–237.233	0.000	–320.222	–237.233	–244.529	42.840
	300.00	57.553	278.701	278.346	–237.127	0.106	–320.737	–237.236	–244.574	42.584
	400.00	59.468	295.549	280.630	–231.266	5.967	–349.485	–237.431	–246.993	32.254
	500.00	60.487	308.940	284.999	–225.263	11.970	–379.733	–237.699	–249.354	26.050
	600.00	61.043	320.022	289.939	–219.184	18.049	–411.197	–238.041	–251.654	21.908
	700.00	61.370	329.458	294.928	–213.062	24.171	–443.682	–238.468	–253.890	18.946
	800.00	61.589	337.668	299.768	–206.913	30.320	–477.048	–238.996	–256.059	16.719
	900.00	61.762	344.932	304.391	–200.745	36.488	–511.185	–239.634	–258.154	14.983
	1000.00	61.925	351.448	308.776	–194.561	42.672	–546.009	–240.385	–260.173	13.590
	1100.00	62.097	357.358	312.928	–188.360	48.873	–581.454	–241.244	–262.111	12.447
	1200.00	62.291	362.769	316.859	–182.141	55.092	–617.464	–246.200	–263.848	11.485
	1300.00	62.513	367.764	320.585	–175.901	61.332	–653.994	–246.719	–265.297	10.660
	1400.00	62.766	372.406	324.123	–169.637	67.596	–691.005	–247.286	–266.706	9.951
	1500.00	63.051	376.746	327.488	–163.347	73.886	–728.465	–247.902	–268.072	9.335
	1600.00	63.368	380.825	330.695	–157.026	80.207	–766.346	–248.571	–269.395	8.795
	1700.00	63.717	384.677	333.759	–150.672	86.561	–804.623	–249.298	–270.674	8.317
	1800.00	64.097	388.329	336.690	–144.282	92.951	–843.274	–250.086	–271.909	7.891
	1900.00	64.504	391.806	339.500	–137.852	99.381	–882.283	–250.936	–273.099	7.508
	2000.00	64.939	395.125	342.199	–131.380	105.853	–921.630	–265.981	–273.797	7.151

References

Phase	H / S	C _p
GAS	Ja1	Ja1

154.238

TITANIUM TRICHLORIDE

TiCl₃

Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	97.097	139.746	139.746	–721.740	0.000	–763.405	–721.740	–654.451	114.657
	300.00	97.143	140.346	139.747	–721.560	0.180	–763.664	–721.701	–654.034	113.877
	400.00	99.119	168.581	143.584	–711.741	9.999	–779.173	–719.671	–631.788	82.503
	500.00	100.629	190.866	150.889	–701.751	19.989	–797.184	–717.739	–610.042	63.731
	600.00	101.954	209.332	159.134	–691.621	30.119	–817.220	–715.846	–588.681	51.249
	700.00	103.192	225.142	167.461	–681.363	40.377	–838.963	–713.976	–567.634	42.357
	800.00	104.384	238.999	175.555	–670.984	50.756	–862.184	–712.126	–546.855	35.706
	900.00	105.549	251.362	183.303	–660.488	61.252	–886.713	–710.298	–526.306	30.546
	1000.00	106.697	262.542	190.677	–649.875	71.865	–912.417	–708.492	–505.960	26.429
	1100.00	107.834	272.764	197.681	–639.149	82.591	–939.189	–706.701	–485.793	23.068
	1103.30	107.872	273.088	197.906	–638.793	82.947	–940.090	–706.642	–485.130	22.968

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 SPT= 1103.3, L= 166.15 kJ

TiCl3[g]

TITANIUM TRICHLORIDE (GAS)

154.238

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	72.491	316.838	316.838	-539.318	0.000	-633.783	-539.318	-524.829	91.948
	300.00	72.668	317.287	316.840	-539.184	0.134	-634.370	-539.324	-524.739	91.365
	400.00	78.886	339.174	319.781	-531.561	7.757	-667.231	-539.491	-519.845	67.885
	500.00	81.725	357.118	325.510	-523.514	15.804	-702.073	-539.502	-514.930	53.794
	600.00	83.234	372.164	332.066	-515.259	24.059	-738.558	-539.484	-510.018	44.401
	700.00	84.116	385.067	338.738	-506.888	32.430	-776.435	-539.501	-505.106	37.692
	800.00	84.664	396.337	345.249	-498.447	40.871	-815.517	-539.588	-500.188	32.659
	900.00	85.016	406.331	351.491	-489.962	49.356	-855.660	-539.772	-495.253	28.744
	1000.00	85.248	415.301	357.431	-481.448	57.870	-896.749	-540.065	-490.292	25.610
	1100.00	85.401	423.434	363.068	-472.915	66.403	-938.692	-540.468	-485.296	23.045
	1200.00	85.500	430.870	368.412	-464.369	74.949	-981.413	-544.979	-480.139	20.900
	1300.00	85.562	437.716	373.484	-455.816	83.502	-1024.847	-545.072	-474.733	19.075
	1400.00	85.596	444.058	378.301	-447.258	92.060	-1068.939	-545.235	-469.317	17.510
	1500.00	85.609	449.964	382.884	-438.697	100.621	-1113.644	-545.475	-463.886	16.154
	1600.00	85.607	455.489	387.251	-430.137	109.181	-1158.919	-545.803	-458.436	14.966
	1700.00	85.593	460.679	391.419	-421.576	117.742	-1204.730	-546.225	-452.964	13.918
	1800.00	85.570	465.571	395.404	-413.018	126.300	-1251.045	-546.750	-447.463	12.985
	1900.00	85.540	470.196	399.220	-404.463	134.855	-1297.836	-547.383	-441.930	12.150
	2000.00	85.503	474.583	402.879	-395.910	143.408	-1345.076	-562.260	-435.917	11.385
	2100.00	85.461	478.754	406.394	-387.362	151.956	-1392.745	-563.017	-429.581	10.685
	2200.00	85.416	482.728	409.774	-378.818	160.500	-1440.821	-563.789	-423.209	10.048
	2273.00	85.381	485.516	412.162	-372.584	166.734	-1476.162	-564.364	-418.535	9.618

References

Phase	H / S	C _p
GAS	Ja1	Ja1

TiCl4

TITANIUM TETRACHLORIDE

189.691

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
LIQ	298.15	145.201	252.404	252.404	-804.165	0.000	-879.419	-804.165	-737.204	129.155
	300.00	145.219	253.302	252.407	-803.896	0.269	-879.887	-804.068	-736.789	128.286
	400.00	146.170	295.211	258.114	-789.326	14.839	-907.411	-799.022	-715.132	93.387
	408.00	146.243	298.106	258.870	-788.157	16.008	-909.784	-798.630	-713.458	91.341

References

Phase	H / S	C _p	Remarks
LIQ	Ja1	Ja1	Ja1 MPT= 249.05, L= 9.967 kJ / BPT= 408., L= 35.77 kJ

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [————— kJ / mol —————]	H–H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [–]
GAS	298.15	95.610	354.913	354.913	–763.162	0.000	–868.979	–763.162	–726.764	127.326
	300.00	95.733	355.504	354.914	–762.985	0.177	–869.636	–763.157	–726.538	126.502
	400.00	100.469	383.772	358.736	–753.148	10.014	–906.657	–762.843	–714.377	93.288
	500.00	102.970	406.486	366.090	–742.964	20.198	–946.207	–762.501	–702.300	73.369
	600.00	104.431	425.400	374.443	–732.588	30.574	–987.828	–762.181	–690.291	60.095
	700.00	105.354	441.573	382.906	–722.095	41.067	–1031.196	–761.914	–678.331	50.618
	800.00	105.972	455.684	391.140	–711.527	51.635	–1076.074	–761.728	–666.405	43.512
	900.00	106.406	468.192	399.019	–700.907	62.255	–1122.279	–761.639	–654.496	37.986
	1000.00	106.720	479.420	406.508	–690.250	72.912	–1169.670	–761.659	–642.591	33.566
	1100.00	106.956	489.603	413.606	–679.565	83.597	–1218.129	–761.788	–630.679	29.948
	1200.00	107.136	498.917	420.333	–668.860	94.302	–1267.561	–766.022	–618.631	26.928
	1300.00	107.277	507.499	426.712	–658.140	105.022	–1317.888	–765.833	–606.357	24.364
	1400.00	107.389	515.453	432.770	–647.406	115.756	–1369.040	–765.711	–594.094	22.166
	1500.00	107.479	522.865	438.532	–636.662	126.500	–1420.960	–765.663	–581.838	20.261
	1600.00	107.553	529.804	444.022	–625.911	137.251	–1473.597	–765.698	–569.583	18.595
	1700.00	107.614	536.326	449.262	–615.152	148.010	–1526.907	–765.823	–557.322	17.124
	1800.00	107.664	542.479	454.271	–604.388	158.774	–1580.850	–766.047	–545.051	15.817
	1900.00	107.706	548.301	459.068	–593.620	169.542	–1635.392	–766.376	–532.765	14.647
	2000.00	107.742	553.827	463.669	–582.847	180.315	–1690.501	–780.945	–520.014	13.581
	2100.00	107.772	559.084	468.089	–572.072	191.090	–1746.148	–781.391	–506.957	12.610
	2200.00	107.798	564.098	472.340	–561.293	201.869	–1802.309	–781.849	–493.878	11.726
	2300.00	107.820	568.891	476.434	–550.512	212.650	–1858.961	–782.321	–480.778	10.919
	2400.00	107.839	573.480	480.383	–539.729	223.433	–1916.081	–782.808	–467.657	10.178
	2500.00	107.856	577.882	484.195	–528.944	234.218	–1973.650	–783.310	–454.515	9.497

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
GAS	298.15	35.346	237.342	237.342	-66.944	0.000	-137.708	-66.944	-98.305	17.223
	300.00	35.396	237.561	237.343	-66.879	0.065	-138.147	-66.954	-98.500	17.150
	400.00	38.283	248.146	238.766	-63.192	3.752	-162.451	-67.463	-108.936	14.226
	500.00	40.352	256.929	241.546	-59.252	7.692	-187.717	-67.905	-119.252	12.458
	600.00	41.611	264.407	244.748	-55.149	11.795	-213.793	-68.323	-129.483	11.272
	700.00	42.360	270.883	248.030	-50.947	15.997	-240.565	-68.769	-139.641	10.420
	800.00	42.807	276.571	251.249	-46.687	20.257	-267.943	-69.283	-149.732	9.776
	900.00	43.074	281.630	254.349	-42.391	24.553	-295.858	-69.892	-159.752	9.272
	1000.00	43.237	286.177	257.308	-38.075	28.869	-324.252	-70.610	-169.699	8.864
	1100.00	43.341	290.303	260.123	-33.746	33.198	-353.080	-71.440	-179.569	8.527
	1200.00	43.413	294.078	262.798	-29.408	37.536	-382.301	-76.377	-189.239	8.237
	1300.00	43.471	297.555	265.339	-25.064	41.880	-411.885	-76.893	-198.624	7.981
	1400.00	43.525	300.778	267.757	-20.714	46.230	-441.804	-77.474	-207.966	7.759
	1500.00	43.582	303.783	270.060	-16.359	50.585	-472.034	-78.125	-217.265	7.566
	1600.00	43.644	306.598	272.256	-11.998	54.946	-502.554	-78.853	-226.518	7.395
	1700.00	43.715	309.246	274.355	-7.630	59.314	-533.348	-79.663	-235.722	7.243
	1800.00	43.792	311.747	276.364	-3.254	63.690	-564.398	-80.562	-244.877	7.106
	1900.00	43.876	314.117	278.289	1.129	68.073	-595.692	-81.553	-253.979	6.982
	2000.00	43.965	316.369	280.137	5.521	72.465	-627.218	-96.769	-262.581	6.858

References

Phase	H / S	C _p
GAS	Pa2	Pa2

85.877

TITANIUM DIFLUORIDE (GAS)

TiF2[g]

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
GAS	298.15	52.935	255.752	255.752	-688.268	0.000	-764.520	-688.268	-694.886	121.741
	300.00	53.030	256.080	255.753	-688.170	0.098	-764.994	-688.274	-694.927	120.998
	400.00	56.438	271.867	257.882	-682.674	5.594	-791.421	-688.581	-697.098	91.032
	500.00	58.153	284.663	262.000	-676.936	11.332	-819.268	-688.907	-699.190	73.044
	600.00	59.202	295.365	266.693	-671.065	17.203	-848.284	-689.294	-701.212	61.046
	700.00	59.936	304.549	271.461	-665.106	23.162	-878.291	-689.757	-703.163	52.471
	800.00	60.502	312.591	276.110	-659.083	29.185	-909.156	-690.312	-705.041	46.034
	900.00	60.971	319.745	280.568	-653.009	35.259	-940.779	-690.965	-706.844	41.024
	1000.00	61.379	326.190	284.813	-646.891	41.377	-973.081	-691.722	-708.569	37.012
	1100.00	61.748	332.058	288.846	-640.734	47.534	-1005.998	-692.578	-710.213	33.725
	1200.00	62.090	337.445	292.674	-634.542	53.726	-1039.477	-697.525	-711.656	30.978
	1300.00	62.412	342.428	296.312	-628.317	59.951	-1073.474	-698.033	-712.813	28.641
	1400.00	62.721	347.065	299.774	-622.060	66.208	-1107.951	-698.588	-713.930	26.637
	1500.00	63.020	351.402	303.072	-615.773	72.495	-1142.877	-699.196	-715.005	24.899
	1600.00	63.311	355.479	306.222	-609.457	78.811	-1178.223	-699.863	-716.037	23.376
	1700.00	63.596	359.326	309.233	-603.111	85.157	-1213.965	-700.597	-717.026	22.032
	1800.00	63.876	362.969	312.118	-596.738	91.530	-1250.081	-701.404	-717.970	20.835
	1900.00	64.153	366.430	314.887	-590.336	97.932	-1286.552	-702.288	-718.866	19.763
	2000.00	64.426	369.727	317.547	-583.907	104.361	-1323.362	-717.383	-719.269	18.785

References

Phase	H / S	C _p
GAS	Ja1	Ja1

104.875

TITANIUM TRIFLUORIDE

TiF3

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
SOL	298.15	92.044	87.864	87.864	-1435.530	0.000	-1461.727	-1435.530	-1361.861	238.592
	300.00	92.052	88.433	87.866	-1435.360	0.170	-1461.890	-1435.493	-1361.404	237.041
	400.00	93.362	115.060	91.487	-1426.101	9.429	-1472.125	-1433.643	-1336.993	174.593
	500.00	95.560	136.120	98.378	-1416.659	18.871	-1484.719	-1431.947	-1313.029	137.171
	600.00	98.106	153.764	106.177	-1406.978	28.552	-1499.236	-1430.260	-1289.403	112.252
	700.00	100.818	169.090	114.093	-1397.032	38.498	-1515.395	-1428.512	-1266.064	94.475
	800.00	103.617	182.734	121.835	-1386.811	48.719	-1532.998	-1426.671	-1242.981	81.158
	900.00	106.468	195.103	129.300	-1376.307	59.223	-1551.900	-1424.719	-1220.136	70.815
	1000.00	109.350	206.469	136.456	-1365.517	70.013	-1571.986	-1422.644	-1197.514	62.552
	1100.00	112.253	217.027	143.306	-1354.437	81.093	-1593.166	-1420.429	-1175.107	55.801
	1200.00	115.170	226.919	149.866	-1343.066	92.464	-1615.369	-1422.062	-1152.790	50.180
	1300.00	118.097	236.253	156.155	-1331.402	104.128	-1638.532	-1419.005	-1130.473	45.423
	1308.90	118.357	237.060	156.703	-1330.350	105.180	-1640.638	-1418.723	-1128.498	45.035

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 SPT= 1308.9, L= 221.63 kJ

TiF3[g]

TITANIUM TRIFLUORIDE (GAS)

104.875

Phase	T [K]	C _p [————— J / (K mol)]	S [————— J / (K mol)]	-(G-H298)/T [—————]	H [—————]	H-H298 [————— kJ / mol]	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	65.095	291.316	291.316	-1188.674	0.000	-1275.530	-1188.674	-1175.664	205.971
	300.00	65.347	291.719	291.317	-1188.553	0.121	-1276.069	-1188.687	-1175.583	204.687
	400.00	74.184	311.911	294.010	-1181.514	7.160	-1306.278	-1189.056	-1171.146	152.936
	500.00	78.274	328.955	299.343	-1173.868	14.806	-1338.345	-1189.156	-1166.655	121.880
	600.00	80.496	343.440	305.516	-1165.919	22.755	-1371.984	-1189.202	-1162.150	101.174
	700.00	81.836	355.958	311.849	-1157.798	30.876	-1406.968	-1189.278	-1157.636	86.384
	800.00	82.706	366.946	318.063	-1149.568	39.106	-1443.124	-1189.428	-1153.107	75.290
	900.00	83.302	376.724	324.048	-1141.266	47.408	-1480.317	-1189.678	-1148.553	66.660
	1000.00	83.728	385.524	329.763	-1132.913	55.761	-1518.437	-1190.040	-1143.965	59.755
	1100.00	84.044	393.519	335.201	-1124.524	64.150	-1557.395	-1190.516	-1139.336	54.103
	1200.00	84.284	400.843	340.370	-1116.107	72.567	-1597.118	-1195.103	-1134.539	49.385
	1300.00	84.470	407.597	345.285	-1107.669	81.005	-1637.544	-1195.271	-1129.485	45.383
	1400.00	84.619	413.862	349.962	-1099.214	89.460	-1678.621	-1195.510	-1124.416	41.952
	1500.00	84.738	419.705	354.419	-1090.746	97.928	-1720.303	-1195.825	-1119.328	38.978
	1600.00	84.836	425.177	358.672	-1082.267	106.407	-1762.550	-1196.225	-1114.215	36.375
	1700.00	84.917	430.322	362.737	-1073.779	114.895	-1805.327	-1196.717	-1109.075	34.078
	1800.00	84.985	435.178	366.628	-1065.284	123.390	-1848.605	-1197.309	-1103.903	32.034
	1900.00	85.042	439.775	370.358	-1056.783	131.891	-1892.354	-1198.004	-1098.696	30.205
	2000.00	85.092	444.138	373.939	-1048.276	140.398	-1936.552	-1212.938	-1093.004	28.546

References

Phase	H / S	C _p
GAS	Ja1	Ja1

TiF4

TITANIUM TETRAFLUORIDE

123.874

Phase	T [K]	C _p [————— J / (K mol)]	S [————— J / (K mol)]	-(G-H298)/T [—————]	H [—————]	H-H298 [————— kJ / mol]	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	114.265	133.972	133.972	-1649.333	0.000	-1689.277	-1649.333	-1559.179	273.162
	300.00	114.600	134.680	133.974	-1649.121	0.212	-1689.525	-1649.284	-1558.620	271.380
	400.00	126.650	169.504	138.641	-1636.988	12.345	-1704.789	-1646.166	-1528.849	199.647
	500.00	134.558	198.641	147.806	-1623.916	25.417	-1723.236	-1642.521	-1499.932	156.697
	558.30	138.804	213.712	153.912	-1615.947	33.386	-1735.262	-1640.193	-1483.436	138.791

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 SPT= 558.3, L= 97.78 kJ

Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
GAS	298.15	84.543	314.914	314.914	–1551.427	0.000	–1645.318	–1551.427	–1515.221	265.460
	300.00	84.796	315.437	314.915	–1551.270	0.157	–1645.902	–1551.433	–1514.996	263.784
	400.00	93.764	341.241	318.372	–1542.280	9.147	–1678.776	–1551.458	–1502.836	196.250
	500.00	98.021	362.671	325.153	–1532.668	18.759	–1714.003	–1551.273	–1490.700	155.732
	600.00	100.424	380.773	332.954	–1522.736	28.691	–1751.200	–1551.072	–1478.605	128.724
	700.00	101.952	396.376	340.926	–1512.612	38.815	–1790.075	–1550.921	–1466.540	109.435
	800.00	103.013	410.063	348.730	–1502.360	49.067	–1830.411	–1550.853	–1454.491	94.969
	900.00	103.802	422.244	356.234	–1492.018	59.409	–1872.038	–1550.886	–1442.445	83.717
	1000.00	104.423	433.214	363.393	–1481.606	69.821	–1914.820	–1551.029	–1430.389	74.716
	1100.00	104.934	443.191	370.200	–1471.137	80.290	–1958.648	–1551.279	–1418.314	67.350
	1200.00	105.371	452.341	376.670	–1460.621	90.806	–2003.430	–1555.630	–1406.092	61.206
	1300.00	105.754	460.791	382.820	–1450.065	101.362	–2049.092	–1555.554	–1393.634	55.997
	1400.00	106.099	468.641	388.673	–1439.472	111.955	–2095.569	–1555.535	–1381.180	51.532
	1500.00	106.415	475.972	394.251	–1428.846	122.581	–2142.803	–1555.581	–1368.725	47.663
	1600.00	106.710	482.849	399.576	–1418.189	133.238	–2190.748	–1555.699	–1356.265	44.277
	1700.00	106.989	489.327	404.666	–1407.504	143.923	–2239.360	–1555.895	–1343.794	41.290
	1800.00	107.254	495.450	409.541	–1396.792	154.635	–2288.601	–1556.175	–1331.310	38.634
	1900.00	107.509	501.255	414.217	–1386.054	165.373	–2338.439	–1556.545	–1318.808	36.257
	2000.00	107.756	506.776	418.708	–1375.291	176.136	–2388.843	–1571.139	–1305.839	34.105
	2100.00	107.995	512.039	423.028	–1364.503	186.924	–2439.786	–1571.591	–1292.563	32.151
	2200.00	108.230	517.069	427.189	–1353.692	197.735	–2491.243	–1572.037	–1279.265	30.374
	2273.00	108.398	520.605	430.133	–1345.785	205.642	–2529.119	–1572.359	–1269.545	29.175

References

Phase	H / S	C _p
GAS	Ja1	Ja1

TiH2

TITANIUM DIHYDRIDE

49.896

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	30.275	29.711	29.711	-144.348	0.000	-153.206	-144.348	-105.073	18.408
	300.00	30.307	29.898	29.711	-144.292	0.056	-153.261	-144.392	-104.829	18.252
	400.00	38.565	39.571	30.973	-140.909	3.439	-156.737	-146.503	-91.305	11.923
	500.00	47.905	49.221	33.659	-136.567	7.781	-161.177	-147.785	-77.339	8.080
	600.00	54.856	58.604	37.041	-131.410	12.938	-166.572	-148.342	-63.188	5.501
	700.00	59.831	67.455	40.760	-125.662	18.686	-172.880	-148.404	-48.985	3.655
	800.00	63.439	75.692	44.618	-119.489	24.859	-180.043	-148.155	-34.797	2.272
	900.00	66.116	83.326	48.501	-113.005	31.343	-187.999	-147.726	-20.651	1.199
	1000.00	68.152	90.402	52.341	-106.287	38.061	-196.689	-147.206	-6.559	0.343
	1100.00	69.735	96.975	56.104	-99.390	44.958	-206.062	-146.653	7.479	-0.355
	1200.00	70.991	103.099	59.768	-92.351	51.997	-216.069	-150.104	21.585	-0.940
	1300.00	72.006	108.823	63.324	-85.199	59.149	-226.669	-149.060	35.851	-1.440
	1400.00	72.839	114.190	66.767	-77.956	66.392	-237.822	-148.030	50.036	-1.867
	1500.00	73.533	119.240	70.099	-70.636	73.712	-249.496	-147.036	64.148	-2.234
	1600.00	74.119	124.005	73.320	-63.253	81.095	-261.661	-146.098	78.196	-2.553
	1700.00	74.620	128.514	76.436	-55.815	88.533	-274.289	-145.231	92.188	-2.833
	1800.00	75.053	132.792	79.449	-48.331	96.017	-287.356	-144.449	106.130	-3.080
	1900.00	75.430	136.860	82.364	-40.806	103.542	-300.840	-143.759	120.032	-3.300
	2000.00	75.763	140.737	85.187	-33.246	111.102	-314.721	-157.301	134.345	-3.509

References

Phase	H / S	C _p
SOL	Ja1	Ja1

174.784

TITANIUM MONOIODIDE (GAS)

Til[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	38.466	268.806	268.806	274.052	0.000	193.908	274.052	220.392	–38.612
	300.00	38.494	269.044	268.807	274.123	0.071	193.410	274.026	220.059	–38.316
	400.00	40.438	280.381	270.339	278.069	4.017	165.916	264.564	202.565	–26.452
	500.00	41.937	289.578	273.296	282.193	8.141	137.404	241.891	189.267	–19.773
	600.00	42.853	297.312	276.671	286.437	12.385	108.049	241.474	178.782	–15.564
	700.00	43.392	303.962	280.106	290.751	16.699	77.978	241.035	168.368	–12.564
	800.00	43.706	309.779	283.459	295.107	21.055	47.285	240.534	158.020	–10.318
	900.00	43.890	314.938	286.676	299.488	25.436	16.044	239.944	147.740	–8.575
	1000.00	44.001	319.568	289.737	303.883	29.831	–15.685	239.250	137.531	–7.184
	1100.00	44.075	323.766	292.643	308.287	34.235	–47.855	238.452	127.397	–6.050
	1200.00	44.133	327.604	295.399	312.698	38.646	–80.427	233.550	117.459	–5.113
	1300.00	44.186	331.138	298.014	317.114	43.062	–113.366	233.076	107.804	–4.332
	1400.00	44.244	334.415	300.498	321.535	47.483	–146.646	232.541	98.188	–3.663
	1500.00	44.311	337.470	302.862	325.963	51.911	–180.242	231.941	88.611	–3.086
	1600.00	44.389	340.332	305.116	330.398	56.346	–214.133	231.268	79.078	–2.582
	1700.00	44.477	343.025	307.267	334.841	60.789	–248.302	230.518	69.588	–2.138
	1800.00	44.576	345.570	309.325	339.293	65.241	–282.733	229.684	60.145	–1.745
	1900.00	44.684	347.983	311.297	343.756	69.704	–317.412	228.762	50.751	–1.395
	2000.00	44.799	350.278	313.189	348.230	74.178	–352.326	213.620	41.853	–1.093

References

Phase	H / S	C _p
GAS	Ja1	Ja1

301.689

TITANIUM DIIODIDE

Til2

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	86.232	122.591	122.591	–266.102	0.000	–302.653	–266.102	–258.854	45.350
	300.00	86.245	123.125	122.593	–265.942	0.160	–302.880	–266.090	–258.809	45.063
	400.00	86.971	148.035	125.984	–257.282	8.820	–316.496	–281.656	–255.904	33.418
	500.00	87.698	167.520	132.413	–248.548	17.554	–332.308	–323.817	–245.433	25.640
	600.00	88.426	183.574	139.641	–239.742	26.360	–349.886	–321.547	–229.970	20.021
	700.00	89.154	197.260	146.918	–230.863	35.239	–368.945	–319.303	–214.885	16.035
	800.00	89.881	209.212	153.973	–221.911	44.191	–389.281	–317.095	–200.119	13.066
	900.00	90.609	219.840	160.712	–212.887	53.215	–410.743	–314.931	–185.628	10.774
	1000.00	91.337	229.425	167.112	–203.789	62.313	–433.214	–312.816	–171.374	8.952
	1100.00	92.065	238.164	173.180	–194.619	71.483	–456.600	–310.746	–157.331	7.471
	1200.00	92.793	246.206	178.935	–185.376	80.726	–480.824	–312.715	–143.355	6.240
	1300.00	93.521	253.662	184.400	–176.061	90.041	–505.822	–310.194	–129.344	5.197
	1357.30	93.938	257.705	187.410	–170.690	95.412	–520.473	–308.747	–121.404	4.672

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 SPT= 1357.3, L= 216.73 kJ

TiI₂[g]

TITANIUM DIIODIDE (GAS)

301.689

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	60.572	323.533	323.533	-19.665	0.000	-116.126	-19.665	-72.328	12.672
	300.00	60.588	323.907	323.534	-19.553	0.112	-116.725	-19.700	-72.654	12.650
	400.00	61.313	341.445	325.920	-13.455	6.210	-150.033	-37.830	-89.442	11.680
	500.00	61.713	355.174	330.447	-7.301	12.364	-184.889	-82.571	-98.013	10.239
	600.00	61.912	366.446	335.536	-1.119	18.546	-220.986	-82.924	-101.070	8.799
	700.00	62.016	375.998	340.651	5.078	24.743	-258.121	-83.362	-104.061	7.765
	800.00	62.087	384.284	345.599	11.283	30.948	-296.144	-83.900	-106.982	6.985
	900.00	62.157	391.601	350.312	17.495	37.160	-334.945	-84.549	-109.830	6.374
	1000.00	62.246	398.154	354.774	23.715	43.380	-374.439	-85.311	-112.599	5.882
	1100.00	62.364	404.092	358.992	29.945	49.610	-414.556	-86.181	-115.287	5.475
	1200.00	62.516	409.525	362.979	36.189	55.854	-455.240	-91.150	-117.772	5.126
	1300.00	62.705	414.536	366.755	42.450	62.115	-496.447	-91.683	-119.969	4.820
	1400.00	62.932	419.191	370.336	48.731	68.396	-538.136	-92.265	-122.123	4.556
	1500.00	63.196	423.541	373.740	55.038	74.703	-580.275	-92.897	-124.234	4.326
	1600.00	63.496	427.629	376.981	61.372	81.037	-622.835	-93.583	-126.301	4.123
	1700.00	63.830	431.489	380.075	67.738	87.403	-665.793	-94.326	-128.323	3.943
	1800.00	64.197	435.147	383.034	74.139	93.804	-709.126	-95.131	-130.300	3.781
	1900.00	64.593	438.629	385.869	80.578	100.243	-752.816	-95.998	-132.231	3.635
	2000.00	65.018	441.953	388.591	87.059	106.724	-796.847	-111.059	-133.669	3.491

References

Phase	H / S	C _p
GAS	Ja1	Ja1

TiI₃

TITANIUM TRIIODIDE

428.593

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	116.770	192.464	192.464	-322.168	0.000	-379.551	-322.168	-318.439	55.789
	300.00	116.784	193.186	192.466	-321.952	0.216	-379.908	-322.149	-318.416	55.441
	400.00	117.512	226.883	197.056	-310.237	11.931	-400.990	-345.482	-316.456	41.325
	500.00	118.240	253.183	205.746	-298.450	23.718	-425.041	-408.685	-303.154	31.670
	600.00	118.968	274.805	215.507	-286.589	35.579	-451.472	-405.237	-282.372	24.583
	700.00	119.696	293.199	225.324	-274.656	47.512	-479.895	-401.820	-262.165	19.563
	800.00	120.424	309.229	234.832	-262.650	59.518	-510.033	-398.443	-242.445	15.830
	900.00	121.152	323.455	243.903	-250.571	71.597	-541.681	-395.115	-223.146	12.951
	999.00	121.873	336.136	252.425	-238.542	83.626	-574.341	-391.872	-204.402	10.688

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 SPT= 999., L= 148.1 kJ

428.593	TITANIUM TRIIODIDE (GAS)									TiI3[g]
Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
GAS	298.15	80.790	382.109	382.109	–150.206	0.000	–264.132	–150.206	–203.019	35.568
	300.00	80.884	382.609	382.110	–150.056	0.150	–264.839	–150.254	–203.347	35.406
	400.00	84.075	406.386	385.330	–141.784	8.422	–304.338	–177.028	–219.804	28.703
	500.00	85.416	425.310	391.499	–133.300	16.906	–345.956	–243.536	–224.068	23.408
	600.00	86.028	440.945	398.475	–124.724	25.482	–389.291	–243.372	–220.191	19.169
	700.00	86.297	454.229	405.515	–116.106	34.100	–434.067	–243.270	–216.337	16.143
	800.00	86.382	465.760	412.341	–107.471	42.735	–480.079	–243.264	–212.491	13.874
	900.00	86.335	475.931	418.853	–98.835	51.371	–527.173	–243.379	–208.639	12.109
	1000.00	86.287	485.025	425.023	–90.204	60.002	–575.229	–243.624	–204.767	10.696
	1100.00	86.239	493.247	430.858	–81.578	68.628	–624.149	–243.995	–200.864	9.538
	1200.00	86.190	500.748	436.374	–72.956	77.250	–673.855	–248.487	–196.803	8.567
	1300.00	86.142	507.645	441.594	–64.340	85.866	–724.279	–248.568	–192.493	7.734
	1400.00	86.094	514.028	446.543	–55.728	94.478	–775.366	–248.726	–188.174	7.021
	1500.00	86.046	519.966	451.242	–47.121	103.085	–827.070	–248.968	–183.841	6.402
	1600.00	85.998	525.518	455.713	–38.519	111.687	–879.347	–249.299	–179.489	5.860
	1700.00	85.950	530.730	459.974	–29.921	120.285	–932.162	–249.727	–175.113	5.381
	1800.00	85.902	535.641	464.043	–21.329	128.877	–985.483	–250.259	–170.710	4.954
	1900.00	85.854	540.284	467.934	–12.741	137.465	–1039.281	–250.900	–166.273	4.571
	2000.00	85.805	544.687	471.663	–4.158	146.048	–1093.531	–265.783	–161.355	4.214

References

Phase	H / S	C _p
GAS	Ja1	Ja1

555.498	TITANIUM TETRAIODIDE									TiI4
Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL–A	298.15	125.653	246.019	246.019	–375.723	0.000	–449.074	–375.723	–370.647	64.936
	300.00	125.947	246.797	246.022	–375.490	0.233	–449.529	–375.738	–370.616	64.530
	379.00	138.507	277.649	249.473	–365.044	10.679	–470.273	–376.456	–369.188	50.882
SOL–B			26.164		9.916					
	379.00	148.114	303.812	249.473	–355.128	20.595	–470.273	–366.540	–369.188	50.882
	400.00	148.114	311.800	252.537	–352.018	23.705	–476.738	–398.132	–368.261	48.090
	428.00	148.114	321.821	256.746	–347.871	27.852	–485.610	–399.249	–366.132	44.684
LIQ			46.336		19.832					
	428.00	156.482	368.157	256.746	–328.039	47.684	–485.610	–379.417	–366.132	44.684
	500.00	156.482	392.488	274.586	–316.772	58.951	–513.016	–461.974	–356.117	37.203
	600.00	156.482	421.018	296.686	–301.124	74.599	–553.735	–456.613	–335.451	29.204
	651.80	156.482	433.976	307.089	–293.018	82.705	–575.884	–453.880	–325.105	26.054

References

Phase	H / S	C _p	Remarks
SOL–A	Ja1	Ja1	
SOL–B	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 BPT= 651.8, L= 56.5 kJ

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
GAS	298.15	104.247	433.070	433.070	-277.274	0.000	-406.394	-277.274	-327.967	57.459
	300.00	104.294	433.715	433.072	-277.081	0.193	-407.196	-277.329	-328.282	57.159
	400.00	105.931	463.976	437.187	-266.558	10.716	-452.149	-312.672	-343.672	44.879
	500.00	106.691	487.705	445.003	-255.923	21.351	-499.775	-401.125	-342.876	35.820
	600.00	107.106	507.197	453.792	-245.231	32.043	-549.549	-400.721	-331.266	28.839
	700.00	107.358	523.728	462.632	-234.507	42.767	-601.117	-400.394	-319.717	23.858
	800.00	107.523	538.075	471.186	-223.762	53.512	-654.223	-400.165	-308.208	20.124
	900.00	107.637	550.746	479.335	-213.004	64.270	-708.676	-400.048	-296.722	17.221
	1000.00	107.720	562.092	487.054	-202.236	75.038	-764.328	-400.050	-285.242	14.900
	1100.00	107.783	572.362	494.350	-191.461	85.813	-821.058	-400.169	-273.757	13.000
	1200.00	107.831	581.742	501.247	-180.680	96.594	-878.770	-404.402	-262.136	11.410
	1300.00	107.870	590.375	507.775	-169.895	107.379	-937.382	-404.219	-250.289	10.057
	1400.00	107.901	598.370	513.964	-159.106	118.168	-996.824	-404.107	-238.452	8.897
	1500.00	107.928	605.815	519.842	-148.315	128.959	-1057.038	-404.074	-226.622	7.892
	1600.00	107.950	612.781	525.436	-137.521	139.753	-1117.971	-404.126	-214.790	7.012
	1700.00	107.969	619.326	530.768	-126.725	150.549	-1179.580	-404.272	-202.953	6.236
	1800.00	107.986	625.498	535.861	-115.927	161.347	-1241.824	-404.518	-191.104	5.546
	1900.00	108.001	631.337	540.734	-105.128	172.146	-1304.668	-404.869	-179.238	4.928
	2000.00	108.014	636.877	545.404	-94.327	182.947	-1368.082	-419.460	-166.907	4.359

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[—]
SOL	298.15	37.072	30.292	30.292	-337.858	0.000	-346.890	-337.858	-309.155	54.163
	300.00	37.251	30.522	30.293	-337.789	0.069	-346.946	-337.863	-308.977	53.798
	400.00	43.664	42.241	31.847	-333.701	4.157	-350.597	-337.821	-299.341	39.090
	500.00	46.844	52.360	34.964	-329.160	8.698	-355.340	-337.451	-289.759	30.271
	600.00	48.751	61.082	38.607	-324.373	13.485	-361.022	-336.941	-280.267	24.399
	700.00	50.057	68.701	42.374	-319.429	18.429	-367.520	-336.391	-270.865	20.212
	800.00	51.043	75.452	46.095	-314.372	23.486	-374.734	-335.859	-261.541	17.077
	900.00	51.842	81.511	49.699	-309.227	28.631	-382.587	-335.383	-252.281	14.642
	1000.00	52.526	87.010	53.159	-304.007	33.851	-391.017	-334.978	-243.069	12.697
	1100.00	53.134	92.045	56.469	-298.724	39.134	-399.973	-334.649	-233.895	11.107
	1200.00	53.691	96.692	59.629	-293.382	44.476	-409.413	-338.393	-224.628	9.778
	1300.00	54.211	101.011	62.648	-287.987	49.871	-419.301	-337.681	-215.177	8.646
	1400.00	54.706	105.047	65.534	-282.541	55.317	-429.606	-337.001	-205.779	7.678
	1500.00	55.180	108.837	68.296	-277.046	60.812	-440.302	-336.359	-196.429	6.840
	1600.00	55.640	112.413	70.943	-271.505	66.353	-451.366	-335.761	-187.120	6.109
	1700.00	56.089	115.800	73.483	-265.919	71.939	-462.778	-335.215	-177.847	5.465
	1800.00	56.529	119.018	75.924	-260.288	77.570	-474.521	-334.726	-168.605	4.893
	1900.00	56.961	122.086	78.273	-254.613	83.245	-486.577	-334.299	-159.388	4.382
	2000.00	57.388	125.019	80.538	-248.896	88.962	-498.933	-348.067	-149.747	3.911
	2100.00	57.810	127.829	82.723	-243.136	94.722	-511.577	-347.666	-139.840	3.478
	2200.00	58.228	130.528	84.835	-237.334	100.524	-524.495	-347.231	-129.954	3.085
	2300.00	58.643	133.125	86.879	-231.490	106.368	-537.679	-346.760	-120.088	2.727
	2400.00	59.056	135.630	88.858	-225.605	112.253	-551.117	-346.254	-110.243	2.399
	2500.00	59.466	138.049	90.778	-219.679	118.179	-564.802	-345.713	-100.421	2.098
	2600.00	59.874	140.389	92.641	-213.712	124.146	-578.725	-345.136	-90.620	1.821
	2700.00	60.281	142.657	94.452	-207.705	130.153	-592.878	-344.522	-80.843	1.564
	2800.00	60.686	144.856	96.213	-201.656	136.202	-607.254	-343.872	-71.089	1.326
	2900.00	61.090	146.993	97.927	-195.568	142.290	-621.847	-343.186	-61.358	1.105
	3000.00	61.493	149.071	99.597	-189.438	148.420	-636.650	-342.463	-51.652	0.899
	3100.00	61.895	151.094	101.226	-183.269	154.589	-651.659	-341.703	-41.971	0.707
	3200.00	62.296	153.065	102.815	-177.059	160.799	-666.867	-340.907	-32.315	0.527
	3223.00	62.388	153.511	103.176	-175.626	162.232	-670.393	-340.718	-30.097	0.488
LIQ			19.473		62.760					
	3223.00	66.944	172.984	103.176	-112.866	224.992	-670.393	-277.958	-30.097	0.488
	3300.00	66.944	174.565	104.823	-107.711	230.147	-683.774	-276.974	-24.188	0.383
	3400.00	66.944	176.563	106.904	-101.017	236.841	-701.331	-275.698	-16.546	0.254
	3500.00	66.944	178.504	108.922	-94.322	243.536	-719.084	-274.425	-8.943	0.133

References

Phase	H / S	C _p
SOL	Sh1	Sh1
LIQ	Sh1	Sh1

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
							kJ / mol			
SOL-A	298.15	39.950	34.769	34.769	-542.665	0.000	-553.031	-542.665	-513.278	89.924
	300.00	40.070	35.016	34.770	-542.591	0.074	-553.096	-542.665	-513.096	89.338
	400.00	44.976	47.277	36.408	-538.317	4.348	-557.228	-542.465	-503.261	65.719
	500.00	48.244	57.682	39.649	-533.648	9.017	-562.490	-542.026	-493.507	51.556
	600.00	50.834	66.714	43.424	-528.691	13.974	-568.719	-541.433	-483.857	42.123
	700.00	53.096	74.723	47.333	-523.492	19.173	-575.798	-540.735	-474.315	35.394
	800.00	55.181	81.951	51.216	-518.077	24.588	-583.638	-539.959	-464.878	30.353
	900.00	57.162	88.565	55.003	-512.459	30.206	-592.168	-539.125	-455.543	26.439
	1000.00	59.079	94.687	58.669	-506.647	36.018	-601.334	-538.238	-446.303	23.312
	1100.00	60.955	100.406	62.207	-500.645	42.020	-611.092	-537.296	-437.155	20.759
	1200.00	62.804	105.790	65.616	-494.457	48.208	-621.405	-540.293	-427.976	18.629
	1265.00	63.996	109.134	67.767	-490.336	52.329	-628.390	-539.270	-421.919	17.422
			3.308			4.184				
SOL-B	1265.00	64.001	112.441	67.767	-486.152	56.513	-628.390	-535.086	-421.919	17.422
	1300.00	64.638	114.197	68.993	-483.901	58.764	-632.356	-534.515	-418.796	16.827
	1400.00	66.449	119.053	72.397	-477.346	65.319	-644.021	-532.817	-409.957	15.296
	1500.00	68.249	123.699	75.663	-470.611	72.054	-656.160	-531.020	-401.244	13.973
	1600.00	70.040	128.161	78.806	-463.697	78.968	-668.755	-529.133	-392.653	12.819
	1700.00	71.825	132.461	81.836	-456.604	86.061	-681.787	-527.164	-384.183	11.804
	1800.00	73.604	136.617	84.765	-449.332	93.333	-695.242	-525.118	-375.831	10.906
	1900.00	75.380	140.644	87.600	-441.883	100.782	-709.106	-523.001	-367.594	10.106
	2000.00	77.152	144.555	90.351	-434.256	108.409	-723.367	-534.947	-359.026	9.377
	2023.00	77.559	145.440	90.972	-432.477	110.188	-726.702	-534.420	-357.006	9.218
			20.682			41.840				
LIQ	2023.00	66.944	166.122	90.972	-390.637	152.028	-726.702	-492.580	-357.006	9.218
	2100.00	66.944	168.623	93.774	-385.482	157.183	-739.590	-491.623	-351.864	8.752
	2200.00	66.944	171.737	97.247	-378.788	163.877	-756.609	-490.389	-345.238	8.197
	2300.00	66.944	174.713	100.551	-372.094	170.571	-773.933	-489.166	-338.668	7.691
	2400.00	66.944	177.562	103.701	-365.399	177.266	-791.547	-487.954	-332.150	7.229
	2500.00	66.944	180.295	106.710	-358.705	183.960	-809.441	-486.754	-325.683	6.805
	2600.00	66.944	182.920	109.591	-352.010	190.655	-827.603	-485.564	-319.264	6.414
	2700.00	66.944	185.447	112.354	-345.316	197.349	-846.022	-484.385	-312.890	6.053
	2800.00	66.944	187.881	115.009	-338.622	204.043	-864.689	-483.216	-306.560	5.719
	2900.00	66.944	190.230	117.562	-331.927	210.738	-883.595	-482.056	-300.271	5.408
	3000.00	66.944	192.500	120.023	-325.233	217.432	-902.733	-480.907	-294.022	5.119

References

Phase	H / S	C _p
SOL-A	Ja1	Ja1
SOL-B	Ja1	Ja1
LIQ	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol)]	S [————— J / (K mol)]	–(G–H298)/T [————— J / (K mol)]	H [————— kJ / mol]	H–H298 [————— kJ / mol]	G [————— kJ / mol]	ΔH _f [————— kJ / mol]	ΔG _f [————— kJ / mol]	log K _f [—]
GAS	298.15	32.479	233.476	233.476	54.392	0.000	–15.219	54.392	24.534	–4.298
	300.00	32.500	233.677	233.477	54.452	0.060	–15.651	54.379	24.349	–4.240
	400.00	34.011	243.228	234.769	57.776	3.384	–39.515	53.628	14.452	–1.887
	500.00	35.291	250.963	237.258	61.245	6.853	–64.237	52.867	4.745	–0.496
	600.00	36.177	257.481	240.100	64.821	10.429	–89.668	52.078	–4.806	0.418
	700.00	36.787	263.106	242.994	68.471	14.079	–115.704	51.228	–14.220	1.061
	800.00	37.214	268.048	245.823	72.172	17.780	–142.266	50.290	–23.507	1.535
	900.00	37.520	272.450	248.541	75.910	21.518	–169.295	49.244	–32.670	1.896
	1000.00	37.745	276.415	251.134	79.673	25.281	–196.742	48.083	–41.711	2.179
	1100.00	37.915	280.021	253.599	83.457	29.065	–224.566	46.806	–50.629	2.404
	1200.00	38.046	283.326	255.940	87.255	32.863	–252.736	41.419	–59.307	2.582
	1300.00	38.150	286.376	258.165	91.065	36.673	–281.223	40.450	–67.662	2.719
	1400.00	38.237	289.206	260.283	94.885	40.493	–310.004	39.414	–75.940	2.833
	1500.00	38.313	291.847	262.300	98.712	44.320	–339.058	38.303	–84.141	2.930
	1600.00	38.383	294.322	264.225	102.547	48.155	–368.368	37.110	–92.266	3.012
	1700.00	38.452	296.651	266.064	106.389	51.997	–397.917	35.829	–100.313	3.082
	1800.00	38.522	298.851	267.825	110.237	55.845	–427.694	34.452	–108.282	3.142
	1900.00	38.598	300.935	269.514	114.093	59.701	–457.684	32.975	–116.172	3.194
	2000.00	38.680	302.917	271.135	117.957	63.565	–487.877	17.266	–123.537	3.226
	2100.00	38.773	304.807	272.693	121.830	67.438	–518.264	15.690	–130.538	3.247
	2200.00	38.877	306.613	274.194	125.712	71.320	–548.836	14.111	–137.464	3.264
	2300.00	38.996	308.343	275.642	129.606	75.214	–579.584	12.533	–144.319	3.278
	2400.00	39.131	310.006	277.039	133.512	79.120	–610.502	10.957	–151.105	3.289
	2500.00	39.283	311.606	278.390	137.432	83.040	–641.583	9.383	–157.825	3.298
	2600.00	39.454	313.150	279.698	141.369	86.977	–672.822	7.816	–164.482	3.304
	2700.00	39.647	314.643	280.964	145.324	90.932	–704.212	6.255	–171.080	3.310
	2800.00	39.863	316.089	282.193	149.299	94.907	–735.749	4.705	–177.619	3.314
	2900.00	40.103	317.491	283.386	153.297	98.905	–767.428	3.168	–184.104	3.316
	3000.00	40.369	318.855	284.546	157.321	102.929	–799.246	1.647	–190.535	3.318

References

Phase	H / S	C _p
GAS	Ja1	Ja1

TiO2

TITANIUM DIOXIDE (RUTILE)

79.879

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	55.103	50.292	50.292	-944.747	0.000	-959.741	-944.747	-889.406	155.820
	300.00	55.288	50.633	50.293	-944.645	0.102	-959.835	-944.746	-889.063	154.800
	400.00	62.836	67.675	52.565	-938.703	6.044	-965.773	-944.364	-870.544	113.681
	500.00	67.204	82.207	57.078	-932.182	12.565	-973.286	-943.603	-852.173	89.026
	600.00	69.930	94.719	62.334	-925.316	19.431	-982.147	-942.681	-833.972	72.604
	700.00	71.762	105.645	67.757	-918.226	26.521	-992.177	-941.718	-815.930	60.885
	800.00	73.074	115.317	73.109	-910.981	33.766	-1003.234	-940.781	-798.025	52.106
	900.00	74.066	123.984	78.289	-903.622	41.125	-1015.207	-939.907	-780.233	45.284
	1000.00	74.849	131.829	83.257	-896.174	48.573	-1028.004	-939.116	-762.535	39.831
	1100.00	75.491	138.994	88.003	-888.657	56.090	-1041.550	-938.413	-744.912	35.373
	1200.00	76.035	145.587	92.531	-881.080	63.667	-1055.784	-941.797	-727.229	31.655
	1300.00	76.508	151.692	96.849	-873.452	71.295	-1070.651	-940.739	-709.392	28.504
	1400.00	76.928	157.377	100.972	-865.780	78.967	-1086.108	-939.729	-691.634	25.805
	1500.00	77.310	162.698	104.912	-858.068	86.679	-1102.115	-938.776	-673.947	23.469
	1600.00	77.661	167.699	108.681	-850.319	94.428	-1118.637	-937.888	-656.321	21.427
	1700.00	77.988	172.417	112.293	-842.536	102.211	-1135.645	-937.075	-638.748	19.626
	1800.00	78.297	176.883	115.758	-834.722	110.025	-1153.112	-936.344	-621.221	18.027
	1900.00	78.591	181.125	119.088	-826.877	117.870	-1171.014	-935.702	-603.732	16.598
	2000.00	78.872	185.163	122.292	-819.004	125.743	-1189.330	-949.283	-585.830	15.300
	2100.00	79.144	189.018	125.378	-811.103	133.644	-1208.041	-948.724	-567.671	14.120
	2130.00	79.224	190.141	126.282	-808.728	136.019	-1213.728	-948.555	-562.228	13.788
LIQ			31.429		66.944					
	2130.00	100.416	221.570	126.282	-741.784	202.963	-1213.728	-881.611	-562.228	13.788
	2200.00	100.416	224.817	129.366	-734.754	209.993	-1229.352	-879.740	-551.763	13.101
	2300.00	100.416	229.281	133.614	-724.713	220.034	-1252.059	-877.085	-536.914	12.194
	2400.00	100.416	233.555	137.690	-714.671	230.076	-1275.202	-874.453	-522.181	11.365
	2500.00	100.416	237.654	141.607	-704.630	240.117	-1298.764	-871.842	-507.556	10.605
	2600.00	100.416	241.592	145.377	-694.588	250.159	-1322.727	-869.253	-493.036	9.905
	2700.00	100.416	245.382	149.011	-684.546	260.201	-1347.077	-866.685	-478.615	9.259
	2800.00	100.416	249.034	152.519	-674.505	270.242	-1371.799	-864.138	-464.289	8.661
	2900.00	100.416	252.557	155.908	-664.463	280.284	-1396.880	-861.611	-450.053	8.106
	3000.00	100.416	255.962	159.187	-654.422	290.325	-1422.307	-859.102	-435.904	7.590

References

Phase	H / S	C _p
SOL	Ja1	Ja1
LIQ	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	55.271	49.907	49.907	-938.722	0.000	-953.602	-938.722	-883.266	154.745
	300.00	55.472	50.249	49.908	-938.620	0.102	-953.694	-938.720	-882.922	153.730
	400.00	63.591	67.437	52.196	-932.626	6.096	-959.600	-938.286	-864.372	112.875
	500.00	68.144	82.162	56.754	-926.018	12.704	-967.099	-937.439	-845.986	88.380
	600.00	70.889	94.848	62.071	-919.056	19.666	-975.965	-936.421	-827.789	72.065
	700.00	72.659	105.918	67.561	-911.873	26.849	-986.015	-935.364	-809.768	60.426
	800.00	73.863	115.703	72.980	-904.543	34.179	-997.106	-934.343	-791.896	51.705
	900.00	74.718	124.455	78.221	-897.112	41.610	-1009.121	-933.397	-774.148	44.930
	1000.00	75.349	132.362	83.247	-889.607	49.115	-1021.969	-932.549	-756.500	39.515
	1100.00	75.827	139.567	88.044	-882.047	56.675	-1035.570	-931.804	-738.932	35.089
	1200.00	76.199	146.181	92.617	-874.445	64.277	-1049.862	-935.162	-721.308	31.398
	1300.00	76.494	152.292	96.975	-866.810	71.912	-1064.790	-934.096	-703.530	28.268
	1400.00	76.734	157.970	101.132	-859.148	79.574	-1080.306	-933.097	-685.832	25.589
	1500.00	76.930	163.271	105.100	-851.464	87.258	-1096.371	-932.173	-668.203	23.269
	1600.00	77.094	168.242	108.892	-843.763	94.959	-1112.949	-931.332	-650.633	21.241
	1700.00	77.233	172.920	112.522	-836.046	102.676	-1130.010	-930.585	-633.113	19.453
	1800.00	77.352	177.338	116.002	-828.317	110.405	-1147.525	-929.940	-615.634	17.865
	1900.00	77.454	181.523	119.341	-820.577	118.145	-1165.470	-929.401	-598.188	16.445
	2000.00	77.544	185.498	122.550	-812.827	125.895	-1183.822	-943.105	-580.322	15.156

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	TPT 918. (ANATASE – RUTILE)

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [————— kJ / mol —————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL-A	298.15	95.805	77.237	77.237	-1520.884	0.000	-1543.912	-1520.884	-1433.824	251.200
	300.00	96.199	77.830	77.238	-1520.706	0.178	-1544.056	-1520.881	-1433.283	249.557
	400.00	117.528	108.426	81.266	-1510.020	10.864	-1553.391	-1519.829	-1404.195	183.369
	470.00	132.459	128.551	86.821	-1501.270	19.614	-1561.690	-1518.038	-1384.095	153.825
SOL-B			2.421		1.138					
	470.00	127.613	130.973	86.821	-1500.132	20.752	-1561.690	-1516.900	-1384.095	153.825
	500.00	130.243	138.952	89.711	-1496.263	24.621	-1565.739	-1516.062	-1375.644	143.713
	600.00	136.449	163.295	99.992	-1482.902	37.982	-1580.879	-1513.010	-1347.842	117.340
	700.00	140.329	184.641	110.592	-1469.050	51.834	-1598.299	-1509.784	-1320.568	98.542
	800.00	142.969	203.562	121.054	-1454.877	66.007	-1617.727	-1506.559	-1293.758	84.474
	900.00	144.888	220.518	131.180	-1440.480	80.404	-1638.946	-1503.431	-1267.347	73.555
	1000.00	146.359	235.862	140.893	-1425.914	94.970	-1661.777	-1500.447	-1241.276	64.838
	1100.00	147.538	249.869	150.172	-1411.218	109.666	-1686.073	-1497.625	-1215.497	57.719
	1200.00	148.518	262.750	159.024	-1396.413	124.471	-1711.713	-1502.967	-1189.730	51.788
	1300.00	149.357	274.671	167.467	-1381.519	139.365	-1738.591	-1499.420	-1163.771	46.761
	1400.00	150.095	285.768	175.526	-1366.545	154.339	-1766.620	-1495.965	-1138.082	42.462
	1500.00	150.758	296.146	183.225	-1351.502	169.382	-1795.721	-1492.619	-1112.637	38.745
	1600.00	151.363	305.895	190.590	-1336.396	184.488	-1825.828	-1489.402	-1087.410	35.500
	1700.00	151.924	315.089	197.646	-1321.231	199.653	-1856.882	-1486.330	-1062.381	32.643
	1800.00	152.450	323.787	204.414	-1306.012	214.872	-1888.829	-1483.421	-1037.527	30.108
	1900.00	152.949	332.043	210.916	-1290.742	230.142	-1921.624	-1480.684	-1012.831	27.845
	2000.00	153.425	339.901	217.170	-1275.423	245.461	-1955.225	-1506.393	-987.384	25.788
	2100.00	153.884	347.398	223.195	-1260.058	260.826	-1989.592	-1503.819	-961.497	23.916
	2115.00	153.951	348.493	224.079	-1257.749	263.135	-1994.812	-1503.431	-957.624	23.651
LIQ			49.456		104.600					
	2115.00	156.900	397.949	224.079	-1153.149	367.735	-1994.812	-1398.831	-957.624	23.651
	2200.00	156.900	404.132	230.917	-1139.812	381.072	-2028.902	-1396.398	-939.941	22.317
	2300.00	156.900	411.106	238.601	-1124.122	396.762	-2069.666	-1393.567	-919.257	20.877
	2400.00	156.900	417.784	245.929	-1108.432	412.452	-2111.113	-1390.769	-898.694	19.560
	2500.00	156.900	424.189	252.932	-1092.742	428.142	-2153.214	-1388.004	-878.248	18.350
	2600.00	156.900	430.342	259.638	-1077.052	443.832	-2195.943	-1385.271	-857.912	17.236
	2700.00	156.900	436.264	266.071	-1061.362	459.522	-2239.275	-1382.570	-837.680	16.206
	2800.00	156.900	441.970	272.251	-1045.672	475.212	-2283.188	-1379.900	-817.548	15.252
	2900.00	156.900	447.476	278.199	-1029.982	490.902	-2327.662	-1377.259	-797.511	14.365
	3000.00	156.900	452.795	283.931	-1014.292	506.592	-2372.677	-1374.647	-777.564	13.539

References

Phase	H / S	C _p
SOL-A	Ja1	Ja1
SOL-B	Ja1	Ja1
LIQ	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [–]
SOL–A	298.15	154.808	129.369	129.369	–2459.146	0.000	–2497.717	–2459.146	–2317.294	405.980
	300.00	155.477	130.329	129.372	–2458.859	0.287	–2497.958	–2459.134	–2316.413	403.323
	400.00	182.841	179.219	135.851	–2441.799	17.347	–2513.486	–2457.268	–2269.062	296.309
	450.00	190.025	201.212	141.907	–2432.459	26.687	–2523.004	–2455.739	–2245.626	260.665
SOL–B			29.473		13.263					
	450.00	181.586	230.685	141.907	–2419.196	39.950	–2523.004	–2442.476	–2245.626	260.665
	500.00	184.096	249.947	151.763	–2410.054	49.092	–2535.027	–2441.272	–2223.818	232.321
	600.00	189.117	283.955	171.034	–2391.393	67.753	–2561.766	–2438.866	–2180.553	189.834
	700.00	194.138	313.485	189.320	–2372.231	86.915	–2591.670	–2436.457	–2137.692	159.517
	800.00	199.158	339.736	206.511	–2352.566	106.580	–2624.355	–2434.048	–2095.176	136.801
	900.00	204.179	363.483	222.653	–2332.399	126.747	–2659.534	–2431.635	–2052.961	119.151
	1000.00	209.200	385.256	237.840	–2311.730	147.416	–2696.986	–2429.205	–2011.017	105.045
	1100.00	214.221	405.430	252.169	–2290.559	168.587	–2736.532	–2426.723	–1969.317	93.515
	1200.00	219.242	424.285	265.735	–2268.886	190.260	–2778.028	–2436.156	–1927.490	83.901
	1300.00	224.262	442.032	278.620	–2246.711	212.435	–2821.352	–2431.898	–1885.272	75.751
	1400.00	229.283	458.835	290.898	–2224.033	235.113	–2866.403	–2427.402	–1843.391	68.778
	1500.00	234.304	474.825	302.631	–2200.854	258.292	–2913.092	–2422.679	–1801.840	62.746
	1600.00	239.325	490.107	313.874	–2177.173	281.973	–2961.344	–2417.748	–1760.610	57.478
	1700.00	244.346	504.767	324.675	–2152.989	306.157	–3011.093	–2412.627	–1719.695	52.840
	1800.00	249.366	518.875	335.074	–2128.303	330.843	–3062.279	–2407.335	–1679.086	48.726
	1900.00	254.387	532.493	345.108	–2103.116	356.030	–3114.852	–2401.883	–1638.776	45.053
	2000.00	259.408	545.669	354.809	–2077.426	381.720	–3168.763	–2438.675	–1597.422	41.720
	2050.00	261.918	552.105	359.542	–2064.393	394.753	–3196.208	–2435.701	–1576.427	40.168
LIQ			83.680		171.544					
	2050.00	267.776	635.785	359.542	–1892.849	566.297	–3196.208	–2264.157	–1576.427	40.168
	2100.00	267.776	642.238	366.197	–1879.460	579.686	–3228.159	–2260.842	–1559.694	38.795
	2200.00	267.776	654.695	379.029	–1852.682	606.464	–3293.010	–2254.254	–1526.460	36.243
	2300.00	267.776	666.598	391.275	–1825.905	633.241	–3359.079	–2247.722	–1493.525	33.919
	2400.00	267.776	677.994	402.986	–1799.127	660.019	–3426.313	–2241.246	–1460.873	31.795
	2500.00	267.776	688.925	414.207	–1772.350	686.796	–3494.663	–2234.824	–1428.490	29.847
	2600.00	267.776	699.428	424.976	–1745.572	713.574	–3564.084	–2228.456	–1396.362	28.053
	2700.00	267.776	709.534	435.329	–1718.794	740.352	–3634.535	–2222.141	–1364.478	26.397
	2800.00	267.776	719.272	445.297	–1692.017	767.129	–3705.978	–2215.877	–1332.828	24.864
	2900.00	267.776	728.669	454.908	–1665.239	793.907	–3778.378	–2209.663	–1301.400	23.441
	3000.00	267.776	737.747	464.185	–1638.462	820.684	–3851.701	–2203.497	–1270.186	22.116

References

Phase	H / S	C _p
SOL–A	Ja1	Ja1
SOL–B	Ja1	Ja1
LIQ	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	208.488	198.740	198.740	-3404.521	0.000	-3463.775	-3404.521	-3213.016	562.907
	300.00	209.201	200.032	198.744	-3404.135	0.386	-3464.144	-3404.510	-3211.828	559.229
	400.00	239.910	264.774	207.362	-3381.556	22.965	-3487.466	-3402.687	-3147.813	411.062
	500.00	258.868	320.508	224.554	-3356.544	47.977	-3516.798	-3399.183	-3084.476	322.233
	600.00	271.153	368.865	244.668	-3330.003	74.518	-3551.322	-3394.840	-3021.933	263.083
	700.00	279.673	411.340	265.507	-3302.438	102.083	-3590.376	-3390.155	-2960.150	220.889
	800.00	285.957	449.114	286.140	-3274.142	130.379	-3633.433	-3385.423	-2899.044	189.288
	900.00	290.843	483.088	306.168	-3245.293	159.228	-3680.072	-3380.815	-2838.526	164.744
	1000.00	294.814	513.944	325.426	-3216.004	188.517	-3729.947	-3376.420	-2778.509	145.134
	1100.00	298.162	542.204	343.867	-3186.350	218.171	-3782.774	-3372.271	-2718.921	129.111
	1200.00	301.074	568.275	361.495	-3156.386	248.135	-3838.315	-3384.373	-2659.223	115.753
	1300.00	303.669	592.478	378.343	-3126.146	278.375	-3896.367	-3378.621	-2599.028	104.430
	1400.00	306.031	615.070	394.454	-3095.659	308.862	-3956.757	-3372.977	-2539.272	94.741
	1500.00	308.216	636.259	409.876	-3064.946	339.575	-4019.334	-3367.479	-2479.914	86.358
	1600.00	310.265	656.217	424.654	-3034.021	370.500	-4083.968	-3362.165	-2420.918	79.035
	1700.00	312.208	675.085	438.836	-3002.896	401.625	-4150.541	-3357.073	-2362.247	72.583
	1800.00	314.066	692.984	452.462	-2971.582	432.939	-4218.952	-3352.236	-2303.868	66.857
	1900.00	315.857	710.013	465.573	-2940.085	464.436	-4289.109	-3347.677	-2245.751	61.740
	1950.00	316.731	718.228	471.946	-2924.271	480.250	-4324.816	-3402.091	-2216.461	59.372
LIQ			115.865		225.936					
	1950.00	368.192	834.093	471.946	-2698.335	706.186	-4324.816	-3176.155	-2216.461	59.372
	2000.00	368.192	843.415	481.117	-2679.925	724.596	-4366.755	-3171.453	-2191.913	57.247
	2100.00	368.192	861.379	498.800	-2643.106	761.415	-4452.002	-3162.108	-2143.166	53.308
	2200.00	368.192	878.507	515.673	-2606.287	798.234	-4539.003	-3152.843	-2094.863	49.738
	2300.00	368.192	894.874	531.807	-2569.467	835.054	-4627.678	-3143.657	-2046.979	46.488
	2400.00	368.192	910.544	547.264	-2532.648	871.873	-4717.954	-3134.548	-1999.493	43.518
	2500.00	368.192	925.574	562.098	-2495.829	908.692	-4809.765	-3125.516	-1952.384	40.793
	2600.00	368.192	940.015	576.357	-2459.010	945.511	-4903.049	-3116.559	-1905.636	38.285
	2700.00	368.192	953.911	590.085	-2422.191	982.330	-4997.750	-3107.676	-1859.231	35.969
	2800.00	368.192	967.301	603.319	-2385.371	1019.150	-5093.815	-3098.865	-1813.154	33.825
	2900.00	368.192	980.222	616.094	-2348.552	1055.969	-5191.195	-3090.124	-1767.390	31.834
	3000.00	368.192	992.704	628.441	-2311.733	1092.788	-5289.844	-3081.449	-1721.927	29.981

References

Phase	H / S	C _p
SOL	Ja1	Ja1
LIQ	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	51.660	263.668	263.668	-244.346	0.000	-322.959	-244.346	-249.944	43.789
	300.00	51.734	263.988	263.669	-244.250	0.096	-323.447	-244.355	-249.979	43.525
	400.00	55.086	279.363	265.742	-238.898	5.448	-350.643	-244.811	-251.783	32.879
	500.00	57.213	291.902	269.759	-233.275	11.071	-379.226	-245.203	-253.479	26.481
	600.00	58.562	302.461	274.353	-227.481	16.865	-408.958	-245.592	-255.099	22.208
	700.00	59.455	311.560	279.033	-221.577	22.769	-439.669	-246.026	-256.650	19.151
	800.00	60.073	319.542	283.608	-215.599	28.747	-471.233	-246.540	-258.133	16.854
	900.00	60.516	326.644	288.003	-209.569	34.777	-503.548	-247.156	-259.546	15.064
	1000.00	60.843	333.038	292.192	-203.500	40.846	-536.538	-247.883	-260.885	13.627
	1100.00	61.092	338.849	296.173	-197.402	46.944	-570.137	-248.723	-262.146	12.448
	1200.00	61.286	344.174	299.955	-191.283	53.063	-604.291	-253.671	-263.206	11.457
	1300.00	61.439	349.085	303.547	-185.147	59.199	-638.958	-254.199	-263.980	10.607
	1400.00	61.562	353.643	306.965	-178.996	65.350	-674.097	-254.795	-264.710	9.876
	1500.00	61.662	357.894	310.220	-172.835	71.511	-709.676	-255.467	-265.395	9.242
	1600.00	61.745	361.876	313.325	-166.665	77.681	-745.667	-256.222	-266.033	8.685
	1700.00	61.815	365.622	316.293	-160.486	83.860	-782.043	-257.069	-266.621	8.192
	1800.00	61.873	369.157	319.132	-154.302	90.044	-818.784	-258.015	-267.156	7.753
	1900.00	61.923	372.503	321.854	-148.112	96.234	-855.868	-259.066	-267.635	7.358
	2000.00	61.966	375.681	324.466	-141.918	102.428	-893.279	-274.357	-267.612	6.989

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		[-]
GAS	298.15	71.957	321.010	321.010	-545.594	0.000	-641.303	-545.594	-535.028	93.735
	300.00	72.042	321.455	321.011	-545.461	0.133	-641.897	-545.597	-534.962	93.145
	400.00	75.727	342.728	323.886	-538.057	7.537	-675.149	-545.735	-531.395	69.393
	500.00	77.954	359.886	329.426	-530.364	15.230	-710.307	-545.843	-527.797	55.139
	600.00	79.341	374.230	335.731	-522.494	23.100	-747.032	-545.973	-524.176	45.634
	700.00	80.249	386.534	342.130	-514.512	31.082	-785.085	-546.167	-520.529	38.842
	800.00	80.873	397.293	348.367	-506.454	39.140	-824.288	-546.454	-516.848	33.747
	900.00	81.318	406.845	354.344	-498.343	47.251	-864.504	-546.852	-513.125	29.781
	1000.00	81.646	415.431	360.031	-490.194	55.400	-905.625	-547.370	-509.351	26.606
	1100.00	81.895	423.225	365.427	-482.016	63.578	-947.564	-548.006	-505.519	24.005
	1200.00	82.087	430.359	370.545	-473.817	71.777	-990.248	-552.756	-501.506	21.830
	1300.00	82.240	436.936	375.402	-465.600	79.994	-1033.617	-553.091	-497.222	19.979
	1400.00	82.362	443.035	380.018	-457.370	88.224	-1077.619	-553.497	-492.909	18.391
	1500.00	82.461	448.721	384.411	-449.129	96.465	-1122.210	-553.983	-488.565	17.013
	1600.00	82.543	454.046	388.598	-440.878	104.716	-1167.351	-554.556	-484.186	15.807
	1700.00	82.612	459.052	392.597	-432.620	112.974	-1213.009	-555.225	-479.768	14.741
	1800.00	82.670	463.775	396.421	-424.356	121.238	-1259.152	-555.997	-475.307	13.793
	1900.00	82.719	468.247	400.085	-416.087	129.507	-1305.755	-556.877	-470.801	12.943
	2000.00	82.761	472.491	403.600	-407.813	137.781	-1352.794	-572.001	-465.800	12.165

References

Phase	H / S	C _p
GAS	Ja1	Ja1

82.878

TITANIUM FLUORIDE OXIDE (GAS)

TiOF[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [– –]
GAS	298.15	48.478	250.677	250.677	–433.044	0.000	–507.783	–433.044	–437.799	76.700
	300.00	48.567	250.977	250.678	–432.954	0.090	–508.247	–433.057	–437.828	76.233
	400.00	52.765	265.559	252.637	–427.875	5.169	–534.099	–433.659	–439.323	57.370
	500.00	55.524	277.653	256.466	–422.450	10.594	–561.277	–434.146	–440.681	46.038
	600.00	57.297	287.944	260.876	–416.803	16.241	–589.570	–434.600	–441.946	38.475
	700.00	58.480	296.871	265.395	–411.011	22.033	–618.820	–435.082	–443.133	33.067
	800.00	59.300	304.737	269.831	–405.119	27.925	–648.908	–435.633	–444.246	29.006
	900.00	59.891	311.757	274.106	–399.158	33.886	–679.739	–436.279	–445.285	25.844
	1000.00	60.329	318.091	278.193	–393.146	39.898	–711.237	–437.033	–446.247	23.310
	1100.00	60.662	323.857	282.086	–387.096	45.948	–743.339	–437.896	–447.127	21.232
	1200.00	60.921	329.147	285.791	–381.016	52.028	–775.993	–442.866	–447.805	19.492
	1300.00	61.126	334.032	289.316	–374.913	58.131	–809.155	–443.415	–448.195	18.009
	1400.00	61.292	338.568	292.674	–368.792	64.252	–842.787	–444.031	–448.540	16.735
	1500.00	61.427	342.802	295.876	–362.656	70.388	–876.858	–444.721	–448.838	15.630
	1600.00	61.539	346.770	298.934	–356.508	76.536	–911.339	–445.496	–449.088	14.661
	1700.00	61.632	350.503	301.859	–350.349	82.695	–946.204	–446.361	–449.287	13.805
	1800.00	61.711	354.028	304.660	–344.182	88.862	–981.433	–447.326	–449.431	13.042
	1900.00	61.778	357.367	307.347	–338.007	95.037	–1017.004	–448.395	–449.520	12.358
	2000.00	61.835	360.537	309.928	–331.826	101.218	–1052.900	–463.704	–449.104	11.729

References

Phase	H / S	C _p
GAS	Ja1	Ja1

TiOF2[g]

TITANIUM DIFLUORIDE OXIDE (GAS)

101.876

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
GAS	298.15	62.785	284.688	284.688	-924.664	0.000	-1009.544	-924.664	-909.327	159.310
	300.00	62.936	285.077	284.690	-924.548	0.116	-1010.071	-924.679	-909.232	158.311
	400.00	69.540	304.160	287.246	-917.898	6.766	-1039.563	-925.318	-903.978	118.047
	500.00	73.600	320.151	292.273	-910.725	13.939	-1070.800	-925.738	-898.592	93.875
	600.00	76.142	333.811	298.085	-903.229	21.435	-1103.515	-926.079	-893.130	77.754
	700.00	77.813	345.683	304.056	-895.525	29.139	-1137.503	-926.426	-887.612	66.234
	800.00	78.962	356.153	309.926	-887.683	36.981	-1172.605	-926.829	-882.040	57.591
	900.00	79.783	365.503	315.591	-879.744	44.920	-1208.696	-927.320	-876.413	50.866
	1000.00	80.389	373.942	321.011	-871.734	52.930	-1245.675	-927.916	-870.726	45.482
	1100.00	80.847	381.626	326.178	-863.671	60.993	-1283.460	-928.620	-864.974	41.074
	1200.00	81.202	388.677	331.096	-855.568	69.096	-1321.980	-933.431	-859.033	37.393
	1300.00	81.481	395.188	335.779	-847.433	77.231	-1361.177	-933.821	-852.818	34.267
	1400.00	81.706	401.235	340.241	-839.273	85.391	-1401.002	-934.280	-846.571	31.586
	1500.00	81.888	406.878	344.498	-831.093	93.571	-1441.410	-934.815	-840.287	29.261
	1600.00	82.038	412.168	348.563	-822.897	101.767	-1482.366	-935.436	-833.966	27.226
	1700.00	82.163	417.145	352.453	-814.686	109.978	-1523.834	-936.151	-827.603	25.429
	1800.00	82.268	421.845	356.179	-806.465	118.199	-1565.785	-936.968	-821.194	23.830
	1900.00	82.356	426.295	359.753	-798.233	126.431	-1608.194	-937.891	-814.738	22.399
	2000.00	82.432	430.522	363.186	-789.994	134.670	-1651.037	-953.057	-807.785	21.097

References

Phase	H / S	C _p
GAS	Ja1	Ja1

79.946

TITANIUM MONOSULFIDE

TiS

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [————— kJ / mol —————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
SOL	298.15	48.094	56.484	56.484	–271.960	0.000	–288.801	–271.960	–270.072	47.316
	300.00	48.108	56.782	56.485	–271.871	0.089	–288.905	–271.960	–270.061	47.022
	400.00	48.844	70.722	58.381	–267.023	4.937	–295.312	–274.282	–269.329	35.171
	500.00	49.580	81.700	61.985	–262.102	9.858	–302.952	–275.964	–267.920	27.989
	600.00	50.317	90.805	66.051	–257.107	14.853	–311.590	–277.330	–266.175	23.173
	700.00	51.053	98.617	70.158	–252.039	19.921	–321.071	–278.443	–264.227	19.717
	800.00	51.790	105.482	74.153	–246.897	25.063	–331.282	–279.632	–262.117	17.114
	900.00	52.526	111.624	77.981	–241.681	30.279	–342.143	–333.703	–258.698	15.014
	1000.00	53.262	117.197	81.628	–236.392	35.568	–353.588	–333.443	–250.378	13.078
	1100.00	53.999	122.308	85.097	–231.028	40.932	–365.567	–333.228	–242.083	11.496
	1200.00	54.735	127.038	88.398	–225.592	46.368	–378.037	–337.051	–233.686	10.172
	1300.00	55.471	131.448	91.541	–220.081	51.879	–390.964	–336.381	–225.099	9.045
	1400.00	56.208	135.586	94.541	–214.497	57.463	–404.318	–335.706	–216.564	8.080
	1500.00	56.944	139.489	97.409	–208.840	63.120	–418.073	–335.030	–208.078	7.246
	1600.00	57.681	143.188	100.155	–203.109	68.851	–432.209	–334.361	–199.636	6.517
	1700.00	58.417	146.706	102.791	–197.304	74.656	–446.705	–333.706	–191.236	5.876
	1800.00	59.153	150.066	105.325	–191.425	80.535	–461.545	–333.072	–182.874	5.307
	1900.00	59.890	153.284	107.765	–185.473	86.487	–476.713	–332.463	–174.546	4.799
	2000.00	60.626	156.375	110.119	–179.447	92.513	–492.197	–346.013	–165.805	4.330
	2100.00	61.363	159.351	112.393	–173.348	98.612	–507.984	–345.359	–156.811	3.900
	2200.00	62.099	162.222	114.593	–167.175	104.785	–524.064	–344.634	–147.849	3.510

References

Phase	H / S	C _p	Remarks
SOL	Mi1	Mi1	Mi1 MPT= 2200.

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[-
GAS	298.15	33.738	246.505	246.505	330.536	0.000	257.040	330.536	275.769	-48.314
	300.00	33.779	246.714	246.506	330.598	0.062	256.584	330.510	275.429	-47.956
	400.00	35.237	256.661	247.852	334.060	3.524	231.395	326.801	257.378	-33.610
	500.00	35.924	264.606	250.435	337.621	7.085	205.318	323.760	240.351	-25.109
	600.00	36.307	271.193	253.362	341.235	10.699	178.519	321.012	223.935	-19.495
	700.00	36.547	276.809	256.320	344.878	14.342	151.112	318.474	207.956	-15.518
	800.00	36.711	281.700	259.193	348.542	18.006	123.181	315.806	192.347	-12.559
	900.00	36.830	286.031	261.939	352.219	21.683	94.791	260.197	178.235	-10.345
	1000.00	36.921	289.917	264.546	355.907	25.371	65.990	258.855	169.200	-8.838
	1100.00	36.995	293.439	267.015	359.602	29.066	36.819	257.403	160.303	-7.612
	1200.00	37.056	296.661	269.353	363.305	32.769	7.312	251.846	151.663	-6.602
	1300.00	37.108	299.629	271.570	367.013	36.477	-22.505	250.713	143.360	-5.760
	1400.00	37.155	302.381	273.673	370.727	40.191	-52.607	249.518	135.147	-5.042
	1500.00	37.196	304.946	275.674	374.444	43.908	-82.974	248.254	127.021	-4.423
	1600.00	37.234	307.348	277.579	378.166	47.630	-113.590	246.913	118.982	-3.884
	1700.00	37.270	309.606	279.397	381.891	51.355	-144.439	245.489	111.029	-3.412
	1800.00	37.303	311.737	281.135	385.620	55.084	-175.507	243.973	103.163	-2.994
	1900.00	37.334	313.755	282.799	389.351	58.815	-206.783	242.362	95.384	-2.622
	2000.00	37.365	315.671	284.395	393.086	62.550	-238.255	226.520	88.137	-2.302
	2100.00	37.394	317.494	285.929	396.824	66.288	-269.914	224.813	81.260	-2.021
	2200.00	37.422	319.235	287.403	400.565	70.029	-301.751	223.106	74.464	-1.768

References

Phase	H / S	C _p
GAS	Mi1	Mi1

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
SOL-A	298.15	67.912	78.366	78.366	-407.103	0.000	-430.468	-407.103	-402.182	70.461
	300.00	68.124	78.787	78.368	-406.977	0.126	-430.613	-407.108	-402.152	70.021
	400.00	79.563	99.952	81.176	-399.593	7.510	-439.573	-411.475	-400.313	52.276
	420.00	81.851	103.889	82.164	-397.979	9.124	-441.612	-411.620	-399.752	49.716
SOL-B			0.000		0.000					
	420.00	71.751	103.889	82.164	-397.979	9.124	-441.612	-411.620	-399.752	49.716
	500.00	73.471	116.545	86.678	-392.170	14.933	-450.442	-414.557	-397.229	41.498
	600.00	75.622	130.130	92.817	-384.715	22.388	-462.793	-417.039	-393.511	34.258
	700.00	77.772	141.949	99.009	-377.045	30.058	-476.410	-418.861	-389.442	29.061
	800.00	79.923	152.474	105.046	-369.161	37.942	-491.140	-420.667	-385.118	25.146
	900.00	82.073	162.012	110.854	-361.061	46.042	-506.871	-528.061	-378.258	21.954
	1000.00	84.224	170.770	116.413	-352.746	54.357	-523.516	-526.610	-361.691	18.893

References

Phase	H / S	C _p
SOL-A	Mi1	Mi1
SOL-B	Mi1	Mi1

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-A	298.15	26.315	64.183	64.183	0.000	0.000	-19.136	0.000	0.000	0.000
	300.00	26.319	64.345	64.183	0.049	0.049	-19.255	0.000	0.000	0.000
	400.00	27.440	72.036	65.224	2.725	2.725	-26.090	0.000	0.000	0.000
	500.00	29.460	78.367	67.236	5.565	5.565	-33.618	0.000	0.000	0.000
	507.00	29.618	78.777	67.392	5.772	5.772	-34.168	0.000	0.000	0.000
SOL-B			0.744		0.377					
	507.00	32.010	79.521	67.392	6.149	6.149	-34.168	0.000	0.000	0.000
	577.00	32.680	83.703	69.122	8.413	8.413	-39.883	0.000	0.000	0.000
LIQ			7.179		4.142					
	577.00	29.706	90.882	69.122	12.555	12.555	-39.883	0.000	0.000	0.000
	600.00	29.706	92.043	69.978	13.239	13.239	-41.987	0.000	0.000	0.000
	700.00	29.706	96.622	73.466	16.209	16.209	-51.426	0.000	0.000	0.000
	800.00	29.706	100.589	76.614	19.180	19.180	-61.291	0.000	0.000	0.000
	900.00	29.706	104.088	79.476	22.151	22.151	-71.528	0.000	0.000	0.000
	1000.00	29.706	107.218	82.096	25.121	25.121	-82.096	0.000	0.000	0.000
	1100.00	29.706	110.049	84.511	28.092	28.092	-92.962	0.000	0.000	0.000
	1200.00	29.706	112.634	86.748	31.062	31.062	-104.098	0.000	0.000	0.000
	1300.00	29.706	115.011	88.832	34.033	34.033	-115.482	0.000	0.000	0.000
	1400.00	29.706	117.213	90.782	37.004	37.004	-127.094	0.000	0.000	0.000
	1500.00	29.706	119.262	92.613	39.974	39.974	-138.919	0.000	0.000	0.000
	1600.00	29.706	121.180	94.339	42.945	42.945	-150.942	0.000	0.000	0.000
	1700.00	29.706	122.981	95.971	45.916	45.916	-163.151	0.000	0.000	0.000
	1744.00	29.706	123.740	96.662	47.223	47.223	-168.579	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL-A	Hu1	Hu1	
SOL-B	Hu1	Hu1	
LIQ	Hu1	Hu1	Hu1 BPT= 1744., L= 164.08 kJ

204.383

THALLIUM (GAS)

Tl[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	20.786	180.963	180.963	180.958	0.000	127.004	180.958	146.140	-25.603
	300.00	20.786	181.091	180.963	180.996	0.038	126.669	180.948	145.924	-25.408
	400.00	20.786	187.071	181.779	183.075	2.117	108.247	180.350	134.336	-17.543
	500.00	20.786	191.709	183.318	185.154	4.196	89.299	179.588	122.917	-12.841
	600.00	20.786	195.499	185.042	187.232	6.274	69.933	173.994	111.920	-9.743
	700.00	20.786	198.703	186.771	189.311	8.353	50.219	173.102	101.645	-7.585
	800.00	20.793	201.480	188.440	191.390	10.432	30.206	172.210	91.497	-5.974
	900.00	20.796	203.929	190.027	193.469	12.511	9.933	171.319	81.462	-4.728
	1000.00	20.811	206.120	191.529	195.549	14.591	-10.571	170.428	71.525	-3.736
	1100.00	20.848	208.105	192.947	197.632	16.674	-31.284	169.540	61.678	-2.929
	1200.00	20.913	209.922	194.287	199.720	18.762	-52.186	168.658	51.912	-2.260
	1300.00	21.011	211.600	195.555	201.816	20.858	-73.263	167.783	42.218	-1.696
	1400.00	21.143	213.161	196.757	203.923	22.965	-94.502	166.920	32.592	-1.216
	1500.00	21.313	214.626	197.900	206.046	25.088	-115.892	166.071	23.027	-0.802
	1600.00	21.521	216.007	198.989	208.187	27.229	-137.425	165.242	13.518	-0.441
	1700.00	21.768	217.319	200.029	210.351	29.393	-159.092	164.436	4.060	-0.125
	1800.00	22.055	218.572	201.025	212.542	31.584	-180.887	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

343.302

THALLIUM ARSENATE

TlAsO4

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	145.686	299.742	299.742	-948.555	0.000	-1037.923	-948.555	-885.812	155.191
	300.00	146.253	300.645	299.745	-948.285	0.270	-1038.478	-948.488	-885.423	154.166
	400.00	168.841	346.121	305.792	-932.423	16.132	-1070.872	-943.751	-865.062	112.966
	500.00	183.389	385.446	317.882	-914.773	33.782	-1107.496	-937.626	-846.078	88.389
	566.00	191.123	408.663	327.133	-902.409	46.146	-1133.712	-933.624	-834.224	76.988

References

Phase	H / S	C _p
SOL	G1	G1

TIBr

THALLIUM BROMIDE

284.287

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	50.480	122.591	122.591	-173.218	0.000	-209.769	-173.218	-167.942	29.423
	300.00	50.535	122.904	122.592	-173.125	0.093	-209.996	-173.243	-167.909	29.236
	400.00	53.503	137.848	124.610	-167.923	5.295	-223.062	-187.958	-163.064	21.294
	500.00	56.471	150.106	128.518	-162.424	10.794	-237.477	-187.146	-156.933	16.395
	600.00	59.440	160.664	133.015	-156.628	16.590	-253.027	-190.883	-150.722	13.122
	700.00	62.408	170.050	137.647	-150.536	22.682	-269.571	-189.629	-144.124	10.755
	733.20	63.393	172.964	139.181	-148.448	24.770	-275.265	-189.149	-141.977	10.115
LIQ			22.369		16.401					
	733.20	77.918	195.333	139.181	-132.047	41.171	-275.265	-172.748	-141.977	10.115
	800.00	75.391	202.019	144.154	-126.926	46.292	-288.541	-170.864	-139.258	9.093
	900.00	71.609	210.680	151.078	-119.576	53.642	-309.188	-168.363	-135.461	7.862
	1000.00	67.827	218.029	157.416	-112.604	60.614	-330.634	-166.245	-131.923	6.891
	1100.00	64.044	224.316	163.219	-106.011	67.207	-352.759	-164.508	-128.578	6.106
	1200.00	60.262	229.727	168.541	-99.795	73.423	-375.468	-163.153	-125.374	5.457

References

Phase	H / S	C _p
SOL	Pa2	Pa2
LIQ	Pa2	Pa2

TICI

THALLIUM CHLORIDE

239.836

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	50.935	111.294	111.294	-204.179	0.000	-237.361	-204.179	-184.964	32.405
	300.00	50.970	111.610	111.295	-204.085	0.094	-237.568	-204.165	-184.845	32.184
	400.00	52.897	126.537	113.318	-198.891	5.288	-249.506	-203.381	-178.523	23.313
	500.00	54.823	138.547	117.200	-193.505	10.674	-262.779	-202.621	-172.397	18.010
	600.00	56.749	148.713	121.626	-187.927	16.252	-277.154	-206.533	-166.171	14.466
	700.00	58.676	157.605	126.143	-182.156	22.023	-292.479	-205.571	-159.517	11.903
	704.00	58.753	157.940	126.323	-181.921	22.258	-293.110	-205.529	-159.254	11.816
LIQ			22.108		15.564					
	704.00	74.894	180.048	126.323	-166.357	37.822	-293.110	-189.965	-159.254	11.816
	800.00	74.894	189.622	133.357	-159.167	45.012	-310.864	-187.406	-155.233	10.136
	900.00	74.894	198.443	140.108	-151.678	52.501	-330.276	-184.750	-151.371	8.785
	1000.00	74.894	206.334	146.343	-144.188	59.991	-350.522	-182.102	-147.805	7.721
	1100.00	74.894	213.472	152.126	-136.699	67.480	-371.518	-179.460	-144.503	6.862
	1200.00	74.894	219.989	157.514	-129.209	74.970	-393.196	-176.823	-141.441	6.157

References

Phase	H / S	C _p
SOL	Nb1,Pa2	Pa2
LIQ	Pa2	Pa2

239.836

THALLIUM CHLORIDE (GAS)

TICI[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	36.243	256.254	256.254	-67.446	0.000	-143.848	-67.446	-91.451	16.022
	300.00	36.258	256.478	256.255	-67.379	0.067	-144.322	-67.459	-91.600	15.949
	400.00	36.756	266.987	257.684	-63.725	3.721	-170.520	-68.214	-99.537	12.998
	500.00	36.987	275.217	260.397	-60.036	7.410	-197.645	-69.152	-107.263	11.206
	600.00	37.112	281.972	263.447	-56.331	11.115	-225.514	-74.937	-114.530	9.971
	700.00	37.187	287.699	266.513	-52.616	14.830	-254.005	-76.031	-121.043	9.032
	800.00	37.236	292.668	269.479	-48.894	18.552	-283.029	-77.133	-127.398	8.318
	900.00	37.270	297.056	272.304	-45.169	22.277	-312.519	-78.241	-133.614	7.755
	1000.00	37.294	300.984	274.979	-41.441	26.005	-342.425	-79.354	-139.707	7.298
	1100.00	37.312	304.540	277.507	-37.710	29.736	-372.704	-80.471	-145.689	6.918
	1200.00	37.325	307.787	279.897	-33.978	33.468	-403.323	-81.592	-151.568	6.598
	1300.00	37.336	310.775	282.159	-30.245	37.201	-434.253	-82.716	-157.354	6.323
	1400.00	37.344	313.542	284.303	-26.511	40.935	-465.470	-83.843	-163.053	6.084
	1500.00	37.351	316.119	286.339	-22.776	44.670	-496.955	-84.973	-168.671	5.874

References

Phase	H / S	C _p
GAS	Pa2	Pa2

310.741

THALLIUM TRICHLORIDE

TICI3

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	108.746	152.298	152.298	-315.055	0.000	-360.463	-315.055	-241.543	42.317
	300.00	108.993	152.971	152.300	-314.854	0.201	-360.745	-314.997	-241.087	41.977
	400.00	122.382	186.160	156.735	-303.285	11.770	-377.749	-311.304	-216.979	28.335
	500.00	135.771	214.907	165.552	-290.377	24.678	-397.831	-306.594	-193.922	20.259

References

Phase	H / S	C _p
SOL	Nb1/e	e

Ti2Cl2[g]

DITHALLIUM DICHLORIDE (GAS)

479.672

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
[————— kJ / mol —————]										
GAS	298.15	81.128	386.878	386.878	-238.906	0.000	-354.254	-238.906	-249.459	43.704
	300.00	81.152	387.380	386.880	-238.756	0.150	-354.970	-238.916	-249.525	43.446
	400.00	82.013	410.862	390.076	-230.591	8.315	-394.936	-239.571	-252.970	33.034
	500.00	82.413	429.211	396.135	-222.368	16.538	-436.973	-240.600	-256.210	26.766
	600.00	82.631	444.257	402.939	-214.115	24.791	-480.669	-251.328	-258.701	22.522
	700.00	82.764	457.006	409.775	-205.844	33.062	-525.749	-252.676	-259.824	19.388
	800.00	82.851	468.063	416.385	-197.563	41.343	-572.014	-254.041	-260.752	17.025
	900.00	82.911	477.826	422.680	-189.275	49.631	-619.318	-255.420	-261.508	15.178
	1000.00	82.955	486.564	428.639	-180.982	57.924	-667.545	-256.809	-262.110	13.691
	1100.00	82.988	494.472	434.270	-172.684	66.222	-716.603	-258.207	-262.573	12.469
	1200.00	83.014	501.694	439.592	-164.384	74.522	-766.417	-259.612	-262.908	11.444
	1300.00	83.035	508.339	444.628	-156.082	82.824	-816.923	-261.024	-263.125	10.572
	1400.00	83.052	514.494	449.402	-147.777	91.129	-868.068	-262.442	-263.234	9.821
	1500.00	83.066	520.224	453.934	-139.471	99.435	-919.807	-263.866	-263.241	9.167

References

Phase	H / S	C _p
GAS	Pa2	Pa2

TiF

THALLIUM FLUORIDE

223.382

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
[————— kJ / mol —————]										
SOL-A	298.15	53.382	95.688	95.688	-324.678	0.000	-353.207	-324.678	-303.840	53.231
	300.00	53.473	96.019	95.689	-324.579	0.099	-353.385	-324.657	-303.710	52.881
	356.30	56.259	105.448	96.501	-321.490	3.188	-359.061	-323.954	-299.840	43.957
SOL-B			0.940		0.335					
	356.30	53.639	106.388	96.501	-321.155	3.523	-359.061	-323.619	-299.840	43.957
	400.00	55.126	112.678	97.930	-318.779	5.899	-363.850	-323.139	-296.952	38.778
	500.00	58.533	125.345	102.181	-313.096	11.582	-375.768	-321.979	-290.538	30.352
	595.40	61.787	135.842	106.750	-307.357	17.321	-388.237	-325.431	-284.431	24.953
LIQ			23.331		13.891					
	595.40	67.279	159.173	106.750	-293.466	31.212	-388.237	-311.540	-284.431	24.953
	600.00	67.279	159.691	107.154	-293.156	31.522	-388.970	-311.448	-284.222	24.744
	700.00	67.279	170.062	115.419	-286.428	38.250	-405.471	-309.466	-279.841	20.882
	800.00	67.279	179.046	122.824	-279.700	44.978	-422.937	-307.512	-275.743	18.004
	900.00	67.279	186.970	129.519	-272.972	51.706	-441.245	-305.579	-271.888	15.780
	1000.00	67.279	194.058	135.625	-266.245	58.433	-460.303	-303.662	-268.247	14.012
	1100.00	67.279	200.471	141.233	-259.517	65.161	-480.035	-301.758	-264.798	12.574
	1200.00	67.279	206.325	146.417	-252.789	71.889	-500.379	-299.865	-261.522	11.384

References

Phase	H / S	C _p
SOL-A	Nb1/L2	Pa2
SOL-B	Pa2	Pa2
LIQ	Pa2	Pa2

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	34.699	244.585	244.585	-185.853	0.000	-258.776	-185.853	-209.408	36.687
	300.00	34.727	244.799	244.585	-185.789	0.064	-259.229	-185.866	-209.554	36.487
	400.00	35.847	254.960	245.963	-182.254	3.599	-284.238	-186.615	-217.340	28.382
	500.00	36.475	263.032	248.597	-178.635	7.218	-310.152	-187.518	-224.921	23.497
	600.00	36.868	269.720	251.576	-174.967	10.886	-336.799	-193.259	-232.050	20.202
	700.00	37.138	275.424	254.586	-171.266	14.587	-364.063	-194.304	-238.433	17.792
	800.00	37.338	280.397	257.508	-167.542	18.311	-391.859	-195.354	-244.665	15.975
	900.00	37.496	284.804	260.301	-163.800	22.053	-420.124	-196.406	-250.766	14.554
	1000.00	37.627	288.762	262.952	-160.043	25.810	-448.805	-197.461	-256.750	13.411
	1100.00	37.741	292.354	265.464	-156.275	29.578	-477.864	-198.516	-262.628	12.471
	1200.00	37.843	295.642	267.844	-152.496	33.357	-507.266	-199.571	-268.409	11.684
	1300.00	37.937	298.675	270.101	-148.707	37.146	-536.984	-200.626	-274.103	11.014
	1400.00	38.026	301.489	272.243	-144.908	40.945	-566.994	-201.680	-279.716	10.436
	1500.00	38.112	304.116	274.282	-141.101	44.752	-597.275	-202.732	-285.253	9.933
	1600.00	38.195	306.578	276.224	-137.286	48.567	-627.811	-203.782	-290.720	9.491
	1700.00	38.278	308.896	278.078	-133.462	52.391	-658.586	-204.830	-296.121	9.099
	1800.00	38.360	311.087	279.852	-129.631	56.222	-689.586	-369.531	-296.110	8.593
	1900.00	38.443	313.163	281.551	-125.790	60.063	-720.800	-369.824	-292.023	8.028
	2000.00	38.527	315.137	283.181	-121.942	63.911	-752.216	-370.148	-287.920	7.520

References

Phase	H / S	C _p
GAS	Pa2	Pa2

Phase	T [K]	C_p	S	$-(G-H_{298})/T$	H	$H-H_{298}$	G	ΔH_f	ΔG_f	$\log K_f$
		[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{kJ}}{\text{mol}}$]	[$\frac{\text{kJ}}{\text{mol}}$]	[$\frac{\text{kJ}}{\text{mol}}$]	[-]
GAS	298.15	78.403	357.979	357.980	-513.795	0.000	-620.527	-513.795	-521.791	91.416
	300.00	78.459	358.465	357.981	-513.650	0.145	-621.189	-513.805	-521.841	90.861
	400.00	80.452	381.350	361.088	-505.690	8.105	-658.230	-514.411	-524.433	68.484
	500.00	81.380	399.413	367.010	-497.593	16.202	-697.300	-515.359	-526.838	55.038
	600.00	81.890	414.300	373.688	-489.428	24.367	-738.008	-526.013	-528.510	46.011
	700.00	82.202	426.948	380.415	-481.222	32.573	-780.086	-527.298	-528.826	39.461
	800.00	82.409	437.939	386.934	-472.991	40.804	-823.342	-528.614	-528.954	34.537
	900.00	82.554	447.655	393.151	-464.742	49.053	-867.631	-529.955	-528.917	30.698
	1000.00	82.662	456.358	399.044	-456.481	57.314	-912.839	-531.315	-528.728	27.618
	1100.00	82.744	464.241	404.619	-448.211	65.584	-958.876	-532.693	-528.403	25.092
	1200.00	82.810	471.443	409.892	-439.933	73.862	-1005.665	-534.084	-527.952	22.981
	1300.00	82.863	478.074	414.885	-431.649	82.146	-1053.145	-535.489	-527.384	21.191
	1400.00	82.908	484.216	419.620	-423.361	90.434	-1101.264	-536.904	-526.708	19.652
	1500.00	82.947	489.938	424.120	-415.068	98.727	-1149.975	-538.329	-525.930	18.314
	1600.00	82.980	495.292	428.402	-406.771	107.024	-1199.239	-539.764	-525.056	17.141
	1700.00	83.010	500.324	432.487	-398.472	115.323	-1249.022	-541.208	-524.093	16.103
	1800.00	83.037	505.069	436.388	-390.169	123.626	-1299.294	-869.971	-512.341	14.868
	1900.00	83.062	509.560	440.122	-381.864	131.931	-1350.028	-869.932	-492.474	13.539
	2000.00	83.084	513.821	443.702	-373.557	140.238	-1401.198	-869.969	-472.607	12.343

References

Phase	H / S	C_p
GAS	Pa2	Pa2

331.288

THALLIUM IODIDE

TII

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL-A	298.15	52.509	127.696	127.696	-123.846	0.000	-161.918	-123.846	-125.469	21.982
	300.00	52.534	128.021	127.697	-123.749	0.097	-162.155	-123.848	-125.479	21.848
	400.00	53.923	143.324	129.774	-118.426	5.420	-175.756	-132.020	-125.723	16.418
	451.00	54.632	149.837	131.681	-115.658	8.188	-183.234	-132.733	-124.877	14.463
SOL-B			2.022		0.912					
	451.00	53.567	151.859	131.681	-114.746	9.100	-183.234	-131.821	-124.877	14.463
	500.00	55.877	157.501	133.938	-112.064	11.782	-190.815	-152.596	-122.185	12.765
	600.00	60.592	168.105	138.763	-106.241	17.605	-207.104	-156.322	-115.933	10.093
	700.00	65.306	177.800	143.657	-99.946	23.900	-224.406	-154.879	-109.310	8.157
LIQ	714.80	66.004	179.173	144.378	-98.974	24.872	-227.047	-154.626	-108.349	7.918
			20.575		14.707					
	714.80	71.965	199.748	144.378	-84.267	39.579	-227.047	-139.919	-108.349	7.918
	800.00	71.965	207.852	150.714	-78.136	45.710	-244.418	-137.925	-104.700	6.836
	900.00	71.965	216.328	157.543	-70.939	52.907	-265.635	-135.590	-100.687	5.844
	1000.00	71.965	223.911	163.807	-63.743	60.103	-287.653	-133.258	-96.934	5.063
	1100.00	71.965	230.769	169.588	-56.546	67.300	-310.393	-130.929	-93.415	4.436
	1200.00	71.965	237.031	174.951	-49.350	74.496	-333.788	-128.604	-90.107	3.922

References

Phase	H / S	C _p
SOL-A	Tk1,Nb1	Pa2
SOL-B	Pa2	Pa2
LIQ	Pa2	Pa2

TII[g]

THALLIUM IODIDE (GAS)

331.288

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
							kJ / mol			
GAS	298.15	37.206	276.458	276.459	7.100	0.000	-75.326	7.100	-38.876	6.811
	300.00	37.224	276.689	276.459	7.169	0.069	-75.838	7.070	-39.161	6.819
	400.00	37.834	287.493	277.928	10.926	3.826	-104.071	-2.668	-54.039	7.057
	500.00	38.116	295.970	280.719	14.725	7.625	-133.260	-25.807	-64.630	6.752
	600.00	38.270	302.934	283.859	18.545	11.445	-163.215	-31.536	-72.044	6.272
	700.00	38.362	308.841	287.016	22.377	15.277	-193.811	-32.556	-78.715	5.874
	800.00	38.422	313.967	290.072	26.217	19.117	-224.957	-33.573	-85.240	5.566
	900.00	38.463	318.495	292.983	30.061	22.961	-256.585	-34.589	-91.637	5.318
	1000.00	38.493	322.550	295.741	33.909	26.809	-288.641	-35.606	-97.921	5.115
	1100.00	38.515	326.219	298.347	37.759	30.659	-321.082	-36.623	-104.104	4.943
	1200.00	38.531	329.571	300.812	41.612	34.512	-353.874	-37.642	-110.193	4.797
	1300.00	38.544	332.656	303.144	45.465	38.365	-386.987	-38.663	-116.198	4.669
	1400.00	38.554	335.513	305.355	49.320	42.220	-420.398	-39.686	-122.124	4.556
	1500.00	38.563	338.173	307.456	53.176	46.076	-454.083	-40.711	-127.977	4.457
	1600.00	38.569	340.662	309.454	57.033	49.933	-488.027	-41.738	-133.761	4.367

References

Phase	H / S	C _p
GAS	Nb1/Tk1,e	Tk1,e

TI2O

THALLIUM OXIDE

424.766

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
							kJ / mol			
SOL	298.15	78.865	145.185	145.185	-169.034	0.000	-212.321	-169.034	-143.466	25.135
	300.00	78.934	145.673	145.186	-168.888	0.146	-212.590	-169.013	-143.308	24.952
	400.00	82.096	168.837	148.323	-160.828	8.206	-228.363	-167.791	-134.922	17.619
	500.00	84.651	187.437	154.346	-152.488	16.546	-246.207	-166.661	-126.840	13.251
	600.00	86.967	203.078	161.198	-143.906	25.128	-265.753	-175.005	-118.466	10.313
	700.00	89.171	216.650	168.171	-135.099	33.935	-286.754	-173.766	-109.138	8.144
	800.00	91.314	228.698	174.998	-126.074	42.960	-309.032	-172.351	-100.000	6.529
	852.00	92.414	234.483	178.453	-121.297	47.737	-321.076	-171.545	-95.322	5.844
			35.407		30.167					
LIQ	852.00	111.713	269.890	178.453	-91.130	77.904	-321.076	-141.378	-95.322	5.844
	900.00	111.713	276.013	183.495	-85.768	83.266	-334.179	-139.689	-92.774	5.384
	1000.00	111.713	287.783	193.345	-74.596	94.438	-362.379	-136.190	-87.749	4.584

References

Phase	H / S	C _p
SOL	Pa1	Pa1
LIQ	Pa1	Pa1

424.766

THALLIUM OXIDE (GAS)

Tl2O[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [- -]
GAS	298.15	52.172	317.466	317.466	6.276	0.000	-88.376	6.276	-19.522	3.420
	300.00	52.229	317.789	317.467	6.373	0.097	-88.964	6.248	-19.682	3.427
	400.00	54.337	333.141	319.546	11.714	5.438	-121.542	4.752	-28.101	3.670
	500.00	55.458	345.397	323.532	17.208	10.932	-155.490	3.035	-36.123	3.774
	600.00	56.191	355.576	328.048	22.793	16.517	-190.553	-8.306	-43.266	3.767
	700.00	56.741	364.281	332.617	28.441	22.165	-226.556	-10.227	-48.940	3.652
	800.00	57.192	371.888	337.061	34.138	27.862	-263.373	-12.140	-54.340	3.548
	900.00	57.587	378.648	341.313	39.877	33.601	-300.906	-14.044	-59.500	3.453
	1000.00	57.947	384.734	345.356	45.654	39.378	-339.080	-15.940	-64.449	3.366

References

Phase	H / S	C _p
GAS	Pa2	Pa1

456.765

DITHALLIUM TRIOXIDE

Tl2O3

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [- -]
SOL	298.15	105.438	158.992	158.992	-394.551	0.000	-441.954	-394.551	-311.936	54.650
	300.00	105.836	159.645	158.994	-394.356	0.195	-442.249	-394.534	-311.423	54.224
	400.00	119.890	192.302	163.351	-382.971	11.580	-459.891	-392.958	-283.928	37.077
	500.00	126.522	219.846	171.973	-370.614	23.937	-480.538	-390.872	-256.909	26.839
	600.00	130.232	243.271	181.954	-357.761	36.790	-503.724	-398.104	-229.810	20.007
	700.00	132.563	263.534	192.194	-344.613	49.938	-529.087	-395.780	-201.943	15.069
	800.00	134.158	281.345	202.247	-331.273	63.278	-556.349	-393.386	-174.415	11.388
	900.00	135.327	297.217	211.934	-317.796	76.755	-585.291	-390.958	-147.189	8.543
	1000.00	136.229	311.524	221.189	-304.216	90.335	-615.740	-388.513	-120.235	6.280
	1100.00	136.959	324.543	230.002	-290.556	103.995	-647.553	-386.057	-93.526	4.441
	1107.00	137.005	325.412	230.603	-289.597	104.954	-649.828	-385.885	-91.665	4.325

References

Phase	H / S	C _p	Remarks
SOL	Pa1	Pa1	Tk1 MPT= 1107.

Tl2S

THALLIUM SULFIDE

440.833

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [—]
[————— kJ / mol —————]										
SOL	298.15	80.279	158.992	158.992	-94.977	0.000	-142.380	-94.977	-94.551	16.565
	300.00	80.333	159.489	158.994	-94.828	0.149	-142.675	-94.968	-94.548	16.462
	400.00	83.262	183.000	162.179	-86.649	8.328	-159.849	-96.722	-94.392	12.326
	500.00	86.190	201.894	168.292	-78.176	16.801	-179.123	-97.833	-93.706	9.789
	600.00	89.119	217.867	175.257	-69.411	25.566	-200.131	-107.989	-92.290	8.035
	700.00	92.048	231.825	182.361	-60.352	34.625	-222.630	-108.182	-89.654	6.690
	730.00	92.927	235.706	184.474	-57.578	37.399	-229.643	-108.182	-88.859	6.358
LIQ			31.523		23.012					
	730.00	99.579	267.229	184.474	-34.566	60.411	-229.643	-85.170	-88.859	6.358
	800.00	99.579	276.348	192.120	-27.595	67.382	-248.673	-84.726	-89.235	5.826
	900.00	99.579	288.076	202.143	-17.637	77.340	-276.906	-136.916	-88.681	5.147
	1000.00	99.579	298.568	211.270	-7.679	87.298	-306.247	-134.734	-83.439	4.358
	1100.00	99.579	308.059	219.645	2.279	97.256	-336.586	-132.560	-78.414	3.724
	1200.00	99.579	316.723	227.379	12.237	107.214	-367.832	-130.392	-73.588	3.203
	1300.00	99.579	324.694	234.562	22.194	117.171	-399.908	-128.229	-68.942	2.770
	1400.00	99.579	332.074	241.267	32.152	127.129	-432.751	-126.071	-64.462	2.405

References

Phase	H / S	C _p
SOL	Mi1	e
LIQ	Mi1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [————— kJ / mol —————]	H–H298	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL–A	298.15	137.840	230.538	230.538	–931.777	0.000	–1000.512	–931.777	–830.353	145.474
	300.00	138.072	231.392	230.541	–931.522	0.255	–1000.939	–931.770	–829.724	144.468
	400.00	150.624	272.832	236.107	–917.087	14.690	–1026.220	–933.211	–795.717	103.910
	500.00	163.176	307.791	247.031	–901.397	30.380	–1055.292	–933.222	–761.352	79.538
	600.00	175.728	338.651	259.775	–884.452	47.325	–1087.642	–941.518	–726.549	63.252
	700.00	188.280	366.682	273.074	–866.251	65.526	–1122.929	–939.078	–690.897	51.555
	773.00	197.443	385.806	282.825	–852.172	79.605	–1150.401	–936.630	–665.135	44.946
			0.000		0.000					
SOL–B	773.00	197.443	385.806	282.825	–852.172	79.605	–1150.401	–936.630	–665.135	44.946
	800.00	200.832	392.643	286.416	–846.796	84.981	–1160.910	–935.598	–655.669	42.811
	900.00	213.384	417.022	299.586	–826.085	105.692	–1201.405	–983.845	–619.786	35.971
	905.00	214.012	418.206	300.239	–825.016	106.761	–1203.493	–983.509	–617.765	35.656
			26.352		23.849					
LIQ	905.00	205.016	444.558	300.239	–801.167	130.610	–1203.493	–959.660	–617.765	35.656
	1000.00	205.016	465.023	314.937	–781.691	150.086	–1246.714	–954.152	–582.155	30.409
	1100.00	205.016	484.563	329.484	–761.189	170.588	–1294.209	–948.452	–545.232	25.891
	1200.00	205.016	502.402	343.161	–740.688	191.089	–1343.570	–942.838	–508.825	22.149

References

Phase	H / S	C _p
SOL–A	Nb1	e
SOL–B	Tk1	e
LIQ	Tk1	e

TlSe

THALLIUM SELENIDE

283.343

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL-A	298.15	49.915	115.311	115.311	-61.296	0.000	-95.676	-61.296	-63.941	11.202
	300.00	49.957	115.620	115.312	-61.204	0.092	-95.890	-61.299	-63.957	11.136
	400.00	50.836	130.157	117.288	-56.149	5.147	-108.211	-61.588	-64.807	8.463
	465.00	50.919	137.818	119.636	-52.841	8.455	-116.927	-61.972	-65.303	7.336
SOL-B			0.540		0.251					
	465.00	51.463	138.358	119.636	-52.590	8.706	-116.927	-61.721	-65.303	7.336
	500.00	51.463	142.093	121.079	-50.789	10.507	-121.835	-67.879	-65.480	6.841
	600.00	51.463	151.476	125.387	-45.643	15.653	-136.528	-73.921	-64.621	5.626
	619.00	51.463	153.080	126.212	-44.665	16.631	-139.421	-74.175	-64.322	5.428
LIQ			35.622		22.050					
	619.00	78.743	188.702	126.212	-22.615	38.681	-139.421	-52.125	-64.322	5.428
	700.00	78.743	198.385	134.015	-16.237	45.059	-155.106	-51.000	-65.989	4.924
	800.00	78.743	208.900	142.733	-8.362	52.934	-175.482	-49.611	-68.225	4.455

References

Phase	H / S	C _p
SOL-A	Pa3	Pa3
SOL-B	Pa3	Pa3
LIQ	Pa3	Pa3

Tl2Se

THALLIUM SELENIDE

487.727

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	79.477	173.636	173.636	-94.140	0.000	-145.910	-94.140	-95.038	16.650
	300.00	79.538	174.128	173.638	-93.993	0.147	-146.231	-94.137	-95.044	16.549
	400.00	82.801	197.456	176.796	-85.876	8.264	-164.859	-94.040	-95.365	12.453
	500.00	86.065	216.284	182.869	-77.433	16.707	-185.574	-100.088	-95.601	9.987
	600.00	89.328	232.264	189.802	-68.663	25.477	-208.021	-110.180	-94.127	8.194
	663.00	91.384	241.283	194.271	-62.971	31.169	-222.941	-110.444	-92.427	7.282

References

Phase	H / S	C _p	Remarks
SOL	Mi1	e	Mi1 MPT= 663.

536.367

THALLIUM TELLURIDE

Tl2Te

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-C	298.15	76.098	174.054	174.054	-80.333	0.000	-132.227	-80.333	-79.198	13.875
	300.00	76.149	174.525	174.056	-80.192	0.141	-132.550	-80.337	-79.191	13.788
	400.00	78.868	196.804	177.075	-72.441	7.892	-151.163	-80.624	-78.770	10.286
	500.00	81.588	214.696	182.866	-64.418	15.915	-171.766	-81.188	-78.249	8.175
	600.00	84.308	229.811	189.462	-56.124	24.209	-194.010	-91.367	-77.080	6.710
	700.00	87.027	243.011	196.189	-47.557	32.776	-217.665	-92.090	-74.641	5.570
	726.00	87.734	246.198	197.923	-45.285	35.048	-224.025	-109.767	-73.909	5.318

References

Phase	H / S	C _p	Remarks
SOL-C	Mi1	Mi1	Mi1 MPT= 726., L= 23.43 kJ

168.934

THULIUM

Tm

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	27.020	74.015	74.015	0.000	0.000	-22.068	0.000	0.000	0.000
	300.00	27.030	74.182	74.016	0.050	0.050	-22.205	0.000	0.000	0.000
	400.00	27.176	81.991	75.079	2.765	2.765	-30.032	0.000	0.000	0.000
	500.00	27.212	88.055	77.090	5.483	5.483	-38.545	0.000	0.000	0.000
	600.00	27.549	93.041	79.345	8.217	8.217	-47.607	0.000	0.000	0.000
	700.00	28.327	97.340	81.615	11.007	11.007	-57.131	0.000	0.000	0.000
	800.00	29.604	101.200	83.826	13.899	13.899	-67.060	0.000	0.000	0.000
	900.00	30.602	104.749	85.956	16.913	16.913	-77.360	0.000	0.000	0.000
	1000.00	31.463	108.018	88.001	20.017	20.017	-88.001	0.000	0.000	0.000
	1100.00	32.273	111.055	89.960	23.204	23.204	-98.956	0.000	0.000	0.000
	1200.00	33.049	113.897	91.838	26.471	26.471	-110.205	0.000	0.000	0.000
	1300.00	33.800	116.572	93.639	29.813	29.813	-121.730	0.000	0.000	0.000
	1400.00	34.534	119.104	95.368	33.230	33.230	-133.515	0.000	0.000	0.000
	1500.00	35.254	121.511	97.031	36.720	36.720	-145.547	0.000	0.000	0.000
	1600.00	35.965	123.809	98.633	40.281	40.281	-157.813	0.000	0.000	0.000
	1700.00	36.668	126.010	100.180	43.912	43.912	-170.305	0.000	0.000	0.000
	1800.00	37.364	128.126	101.674	47.614	47.614	-183.013	0.000	0.000	0.000
	1818.00	37.489	128.498	101.937	48.288	48.288	-185.322	0.000	0.000	0.000
			9.263		16.841					
LIQ	1818.00	41.380	137.762	101.937	65.129	65.129	-185.322	0.000	0.000	0.000
	1900.00	41.380	139.587	103.523	68.522	68.522	-196.694	0.000	0.000	0.000
	2000.00	41.380	141.710	105.380	72.660	72.660	-210.760	0.000	0.000	0.000
	2100.00	41.380	143.729	107.158	76.798	76.798	-225.033	0.000	0.000	0.000
	2200.00	41.380	145.654	108.865	80.936	80.936	-239.503	0.000	0.000	0.000
	2217.00	41.380	145.972	109.148	81.639	81.639	-241.981	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL	Hu1	Hu1	
LIQ	Hu1	Hu1	Hu1 BPT= 2217., L= 190.69 kJ

Tm[g]

THULIUM (GAS)

168.934

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	20.786	190.113	190.113	232.212	0.000	175.530	232.212	197.597	-34.618
	300.00	20.786	190.242	190.114	232.250	0.038	175.178	232.200	197.383	-34.367
	400.00	20.786	196.222	190.929	234.329	2.117	155.840	231.564	185.872	-24.272
	500.00	20.786	200.860	192.469	236.408	4.196	135.978	230.925	174.523	-18.232
	600.00	20.786	204.650	194.193	238.486	6.274	115.696	230.269	163.304	-14.217
	700.00	20.786	207.854	195.921	240.565	8.353	95.067	229.558	152.198	-11.357
	800.00	20.786	210.630	197.590	242.644	10.432	74.140	228.744	141.200	-9.219
	900.00	20.786	213.078	199.178	244.722	12.510	52.952	227.809	130.313	-7.563
	1000.00	20.792	215.268	200.679	246.801	14.589	31.533	226.784	119.534	-6.244
	1100.00	20.797	217.250	202.097	248.880	16.668	9.905	225.676	108.862	-5.169
	1200.00	20.805	219.060	203.436	250.960	18.748	-11.911	224.490	98.294	-4.279
	1300.00	20.821	220.726	204.703	253.042	20.830	-33.902	223.228	87.828	-3.529
	1400.00	20.846	222.270	205.903	255.125	22.913	-56.052	221.895	77.463	-2.890
	1500.00	20.883	223.709	207.043	257.211	24.999	-78.352	220.492	67.195	-2.340
	1600.00	20.932	225.058	208.127	259.302	27.090	-100.791	219.021	57.022	-1.862
	1700.00	20.995	226.329	209.161	261.398	29.186	-123.361	217.486	46.944	-1.442
	1800.00	21.073	227.531	210.148	263.501	31.289	-146.055	215.888	36.958	-1.072
	1900.00	21.165	228.673	211.093	265.613	33.401	-168.865	214.091	27.829	-0.765
	2000.00	21.272	229.761	212.000	267.735	35.523	-191.788	212.075	18.972	-0.496
	2100.00	21.394	230.802	212.870	269.868	37.656	-214.816	209.070	10.217	-0.254
	2200.00	21.532	231.800	213.708	272.014	39.802	-237.946	205.079	1.556	-0.037
	2300.00	21.686	232.761	214.516	274.175	41.963	-261.175	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

408.646 THULIUM TRIBROMIDE (GAS) TmBr3[g]										
Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	79.840	401.196	401.196	-545.594	0.000	-665.211	-545.594	-575.071	100.750
	300.00	79.879	401.690	401.198	-545.446	0.148	-665.953	-545.706	-575.254	100.161
	400.00	81.268	424.889	404.351	-537.379	8.215	-707.334	-592.077	-575.578	75.163
	500.00	81.916	443.101	410.345	-529.216	16.378	-750.767	-592.170	-571.442	59.698
	600.00	82.272	458.070	417.089	-521.005	24.589	-795.847	-592.271	-567.288	49.387
	700.00	82.489	470.770	423.873	-512.766	32.828	-842.305	-592.425	-563.112	42.020
	800.00	82.634	481.795	430.440	-504.510	41.084	-889.946	-592.682	-558.909	36.493
	900.00	82.735	491.534	436.697	-496.241	49.353	-938.622	-593.064	-554.665	32.192
	1000.00	82.810	500.255	442.625	-487.964	57.630	-988.219	-593.539	-550.374	28.749
	1100.00	82.868	508.150	448.228	-479.680	65.914	-1038.645	-594.101	-546.031	25.929
	1200.00	82.914	515.363	453.527	-471.391	74.203	-1089.826	-594.748	-541.633	23.577
	1300.00	82.951	522.001	458.542	-463.097	82.497	-1141.698	-595.475	-537.178	21.584
	1400.00	82.983	528.150	463.297	-454.800	90.794	-1194.210	-596.283	-532.664	19.874
	1500.00	83.010	533.876	467.814	-446.501	99.093	-1247.314	-597.168	-528.089	18.390
	1600.00	83.033	539.234	472.112	-438.199	107.395	-1300.973	-598.131	-523.453	17.089
	1700.00	83.055	544.268	476.210	-429.894	115.700	-1355.150	-599.170	-518.754	15.939
	1800.00	83.074	549.016	480.124	-421.588	124.006	-1409.817	-600.284	-513.992	14.916
	1900.00	83.091	553.508	483.869	-413.280	132.314	-1464.945	-618.611	-508.400	13.977
	2000.00	83.107	557.771	487.458	-404.970	140.624	-1520.511	-620.174	-502.559	13.125

References

Phase	H / S	C _p
GAS	Pa2	Pa2

275.292 THULIUM TRICHLORIDE TmCl3										
Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	97.685	146.858	146.858	-986.587	0.000	-1030.373	-986.587	-908.522	159.169
	300.00	97.724	147.463	146.860	-986.406	0.181	-1030.645	-986.550	-908.038	158.103
	400.00	99.506	175.833	150.716	-976.540	10.047	-1046.874	-984.600	-882.162	115.198
	500.00	100.960	198.197	158.054	-966.516	20.071	-1065.614	-982.649	-856.777	89.507
	600.00	102.285	216.722	166.332	-956.353	30.234	-1086.386	-980.674	-831.788	72.414
	700.00	103.549	232.585	174.690	-946.061	40.526	-1108.870	-978.687	-807.131	60.229
	800.00	104.780	246.493	182.814	-935.644	50.943	-1132.838	-976.720	-782.757	51.109
	900.00	105.993	258.904	190.591	-925.105	61.482	-1158.119	-974.784	-758.628	44.030
	1000.00	107.194	270.134	197.993	-914.446	72.141	-1184.580	-972.840	-734.715	38.378
	1100.00	108.387	280.407	205.024	-903.667	82.920	-1212.114	-970.879	-710.997	33.762

References

Phase	H / S	C _p
SOL	Nb1/e	e

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
GAS	298.15	78.090	374.126	374.126	-665.674	0.000	-777.220	-665.674	-655.369	114.818
	300.00	78.149	374.609	374.127	-665.529	0.145	-777.912	-665.674	-655.305	114.099
	400.00	80.256	397.423	377.223	-657.594	8.080	-816.563	-665.654	-651.851	85.123
	500.00	81.240	415.449	383.129	-649.514	16.160	-857.239	-665.648	-648.402	67.738
	600.00	81.781	430.313	389.791	-641.361	24.313	-899.548	-665.682	-644.951	56.148
	700.00	82.114	442.947	396.505	-633.165	32.509	-943.227	-665.791	-641.488	47.868
	800.00	82.336	453.927	403.011	-624.941	40.733	-988.083	-666.018	-638.002	41.657
	900.00	82.493	463.634	409.218	-616.700	48.974	-1033.970	-666.379	-634.480	36.824
	1000.00	82.610	472.332	415.102	-608.444	57.230	-1080.776	-666.839	-630.912	32.955
	1100.00	82.700	480.210	420.669	-600.178	65.496	-1128.409	-667.391	-627.293	29.788
	1200.00	82.773	487.409	425.935	-591.905	73.769	-1176.795	-668.029	-623.620	27.145
	1300.00	82.833	494.037	430.922	-583.624	82.050	-1225.872	-668.751	-619.891	24.908
	1400.00	82.884	500.177	435.652	-575.338	90.336	-1275.587	-669.554	-616.103	22.987
	1500.00	82.928	505.897	440.146	-567.048	98.626	-1325.894	-670.435	-612.254	21.321
	1600.00	82.967	511.251	444.425	-558.753	106.921	-1376.754	-671.396	-608.345	19.860
	1700.00	83.002	516.282	448.505	-550.454	115.220	-1428.133	-672.434	-604.373	18.570
	1800.00	83.034	521.027	452.404	-542.153	123.521	-1480.001	-673.549	-600.337	17.421
	1900.00	83.064	525.517	456.135	-533.848	131.826	-1532.330	-691.878	-595.472	16.371
	2000.00	83.091	529.778	459.711	-525.540	140.134	-1585.096	-693.446	-590.357	15.419

References

Phase	H / S	C _p
GAS	Pa2	Pa2

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [—]
SOL-A	298.15	94.967	115.478	115.478	-1505.403	0.000	-1539.833	-1505.403	-1427.070	250.017
	300.00	95.079	116.066	115.480	-1505.227	0.176	-1540.047	-1505.364	-1426.584	248.390
	400.00	99.426	144.080	119.270	-1495.479	9.924	-1553.111	-1503.151	-1400.653	182.907
	500.00	102.055	166.567	126.555	-1485.397	20.006	-1568.680	-1500.831	-1375.296	143.676
	600.00	104.008	185.353	134.832	-1475.090	30.313	-1586.302	-1498.469	-1350.410	117.564
	700.00	105.641	201.512	143.230	-1464.606	40.797	-1605.664	-1496.100	-1325.921	98.941
	800.00	107.104	215.715	151.420	-1453.967	51.436	-1626.539	-1493.763	-1301.770	84.997
	900.00	108.468	228.409	159.282	-1443.188	62.215	-1648.757	-1491.469	-1277.909	74.168
	1000.00	109.770	239.906	166.778	-1432.276	73.127	-1672.181	-1489.181	-1254.303	65.518
	1100.00	111.032	250.427	173.911	-1421.235	84.168	-1696.705	-1486.887	-1230.926	58.452
	1200.00	112.267	260.141	180.697	-1410.070	95.333	-1722.240	-1484.581	-1207.759	52.572
	1300.00	113.483	269.176	187.160	-1398.783	106.620	-1748.711	-1482.256	-1184.784	47.605
	1326.00	113.797	271.426	188.790	-1395.828	109.575	-1755.739	-1481.648	-1178.841	46.438
			22.845		30.292					
SOL-B	1326.00	97.843	294.271	188.790	-1365.536	139.867	-1755.739	-1451.356	-1178.841	46.438
	1400.00	97.843	299.584	194.507	-1358.296	147.107	-1777.713	-1450.830	-1163.647	43.416
	1431.00	97.843	301.727	196.807	-1355.262	150.141	-1787.034	-1450.625	-1157.291	42.244
			20.175		28.870					
LIQ	1431.00	140.336	321.902	196.807	-1326.392	179.011	-1787.034	-1421.755	-1157.291	42.244
	1500.00	140.336	328.510	202.715	-1316.709	188.694	-1809.475	-1418.398	-1144.618	39.859

References

Phase	H / S	C _p
SOL-A	Pa2	Pa2
SOL-B	Pa2	Pa2
LIQ	Pa2	Pa2

Phase	T [K]	C_p	S	$-(G-H_{298})/T$	H	H-H ₂₉₈	G	ΔH_f	ΔG_f	$\log K_f$
		[————— J / (K mol) —————]		[—————]			[————— kJ / mol —————]			[—]
GAS	298.15	70.864	339.369	339.369	-1215.870	0.000	-1317.053	-1215.870	-1204.290	210.987
	300.00	70.971	339.808	339.370	-1215.739	0.131	-1317.681	-1215.876	-1204.218	209.673
	400.00	75.310	360.880	342.214	-1208.404	7.466	-1352.756	-1216.076	-1200.298	156.743
	500.00	77.773	377.974	347.711	-1200.739	15.131	-1389.725	-1216.173	-1196.341	124.981
	600.00	79.262	392.296	353.981	-1192.881	22.989	-1428.258	-1216.260	-1192.367	103.805
	700.00	80.221	404.591	360.353	-1184.904	30.966	-1468.117	-1216.398	-1188.375	88.678
	800.00	80.872	415.348	366.569	-1176.847	39.023	-1509.125	-1216.642	-1184.357	77.331
	900.00	81.331	424.901	372.530	-1168.736	47.134	-1551.147	-1217.016	-1180.299	68.503
	1000.00	81.667	433.489	378.204	-1160.585	55.285	-1594.074	-1217.490	-1176.195	61.438
	1100.00	81.919	441.285	383.589	-1152.405	63.465	-1637.818	-1218.057	-1172.039	55.655
	1200.00	82.112	448.421	388.699	-1144.203	71.667	-1682.309	-1218.714	-1167.827	50.834
	1300.00	82.263	455.000	393.549	-1135.984	79.886	-1727.484	-1219.457	-1163.557	46.752
	1400.00	82.383	461.101	398.159	-1127.751	88.119	-1773.293	-1220.285	-1159.227	43.251
	1500.00	82.480	466.788	402.547	-1119.508	96.362	-1819.690	-1221.197	-1154.834	40.215
	1600.00	82.559	472.114	406.730	-1111.256	104.614	-1866.638	-1222.191	-1150.378	37.556
	1700.00	82.623	477.121	410.725	-1102.997	112.873	-1914.103	-1223.266	-1145.857	35.208
	1800.00	82.677	481.845	414.546	-1094.732	121.138	-1962.053	-1224.421	-1141.271	33.119
	1900.00	82.721	486.317	418.207	-1086.462	129.408	-2010.463	-1242.793	-1135.852	31.227
	2000.00	82.759	490.561	421.719	-1078.188	137.682	-2059.309	-1244.406	-1130.181	29.517

References

Phase	H / S	C_p
GAS	Pa2	Pa2

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [—]
GAS	298.15	81.434	429.794	429.794	-329.699	0.000	-457.842	-329.699	-383.833	67.246
	300.00	81.455	430.297	429.795	-329.548	0.151	-458.638	-329.749	-384.169	66.890
	400.00	82.183	453.845	433.001	-321.361	8.338	-502.899	-356.735	-401.039	52.370
	500.00	82.522	472.225	439.075	-313.124	16.575	-549.236	-423.506	-405.655	42.379
	600.00	82.707	487.288	445.893	-304.862	24.837	-597.235	-423.606	-402.076	35.004
	700.00	82.820	500.046	452.741	-296.585	33.114	-646.618	-423.763	-398.477	29.735
	800.00	82.893	511.110	459.361	-288.299	41.400	-697.188	-424.027	-394.848	25.781
	900.00	82.945	520.877	465.664	-280.007	49.692	-748.797	-424.420	-391.178	22.703
	1000.00	82.983	529.618	471.630	-271.711	57.988	-801.329	-424.908	-387.459	20.239
	1100.00	83.011	537.529	477.267	-263.411	66.288	-854.693	-425.488	-383.687	18.220
	1200.00	83.033	544.753	482.594	-255.109	74.590	-908.812	-426.154	-379.858	16.535
	1300.00	83.051	551.400	487.634	-246.804	82.895	-963.624	-426.904	-375.970	15.107
	1400.00	83.066	557.555	492.412	-238.499	91.200	-1019.075	-427.735	-372.022	13.880
	1500.00	83.078	563.286	496.948	-230.191	99.508	-1075.121	-428.648	-368.011	12.815
	1600.00	83.089	568.648	501.263	-221.883	107.816	-1131.720	-429.640	-363.937	11.881
	1700.00	83.098	573.686	505.377	-213.574	116.125	-1188.840	-430.710	-359.798	11.055
	1800.00	83.106	578.436	509.305	-205.264	124.435	-1246.448	-431.859	-355.594	10.319
	1900.00	83.113	582.929	513.063	-196.953	132.746	-1304.518	-450.222	-350.557	9.637
	2000.00	83.120	587.193	516.664	-188.641	141.058	-1363.026	-451.823	-345.270	9.018

References

Phase	H / S	C _p
GAS	Pa2	Pa2

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL-A	298.15	116.736	139.746	139.746	-1888.658	0.000	-1930.323	-1888.658	-1794.441	314.379
	300.00	116.898	140.468	139.748	-1888.442	0.216	-1930.582	-1888.623	-1793.857	312.338
	400.00	122.730	175.007	144.417	-1876.422	12.236	-1946.425	-1886.489	-1762.577	230.169
	500.00	125.670	202.740	153.401	-1863.988	24.670	-1965.358	-1884.080	-1731.875	180.928
	600.00	127.471	225.823	163.602	-1851.325	37.333	-1986.819	-1881.626	-1701.665	148.143
	700.00	128.734	245.573	173.935	-1838.512	50.146	-2010.412	-1879.274	-1671.860	124.756
	800.00	129.711	262.829	183.991	-1825.588	63.070	-2035.851	-1877.140	-1642.378	107.236
	900.00	130.521	278.155	193.618	-1812.575	76.083	-2062.914	-1875.263	-1613.148	93.625
	1000.00	131.228	291.944	202.772	-1799.487	89.171	-2091.430	-1873.575	-1584.116	82.746
	1100.00	131.867	304.481	211.457	-1786.332	102.326	-2121.261	-1872.058	-1555.245	73.852
	1200.00	132.460	315.981	219.695	-1773.115	115.543	-2152.292	-1870.698	-1526.505	66.447
	1300.00	133.021	326.606	227.516	-1759.841	128.817	-2184.428	-1869.483	-1497.873	60.185
	1400.00	133.558	336.484	234.950	-1746.512	142.146	-2217.588	-1868.408	-1469.328	54.821
	1500.00	134.078	345.716	242.030	-1733.130	155.528	-2251.703	-1867.466	-1440.856	50.175
	1600.00	134.584	354.385	248.784	-1719.697	168.961	-2286.713	-1866.656	-1412.443	46.112
	1680.00	134.982	360.961	253.971	-1708.914	179.744	-2315.329	-1866.100	-1389.746	43.210
SOL-B			0.772		1.297					
	1680.00	133.888	361.733	253.971	-1707.617	181.041	-2315.329	-1864.803	-1389.746	43.210
	1700.00	133.888	363.318	255.248	-1704.939	183.719	-2322.579	-1864.700	-1384.091	42.528
	1800.00	133.888	370.971	261.466	-1691.550	197.108	-2359.297	-1864.288	-1355.833	39.345
	1900.00	133.888	378.210	267.422	-1678.161	210.497	-2396.760	-1898.324	-1326.060	36.456
	2000.00	133.888	385.077	273.134	-1664.773	223.885	-2434.927	-1898.855	-1295.927	33.846

References

Phase	H / S	C _p
SOL-A	Nb1	Pa1
SOL-B	Pa1	Pa1

238.029 URANIUM U										
Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL-A	298.15	27.654	50.292	50.292	0.000	0.000	-14.994	0.000	0.000	0.000
	300.00	27.690	50.463	50.292	0.051	0.051	-15.088	0.000	0.000	0.000
	400.00	29.701	58.701	51.402	2.920	2.920	-20.561	0.000	0.000	0.000
	500.00	32.007	65.569	53.566	6.002	6.002	-26.783	0.000	0.000	0.000
	600.00	34.760	71.640	56.080	9.336	9.336	-33.648	0.000	0.000	0.000
	700.00	38.012	77.236	58.707	12.970	12.970	-41.095	0.000	0.000	0.000
	800.00	41.785	82.553	61.358	16.956	16.956	-49.086	0.000	0.000	0.000
	900.00	46.088	87.717	64.001	21.345	21.345	-57.601	0.000	0.000	0.000
	941.00	48.007	89.812	65.080	23.274	23.274	-61.240	0.000	0.000	0.000
SOL-B			2.966		2.791					
	941.00	42.928	92.778	65.080	26.065	26.065	-61.240	0.000	0.000	0.000
	1000.00	42.928	95.389	66.792	28.597	28.597	-66.792	0.000	0.000	0.000
	1048.00	42.928	97.402	68.148	30.658	30.658	-71.419	0.000	0.000	0.000
SOL-C			4.539		4.757					
	1048.00	38.284	101.941	68.148	35.415	35.415	-71.419	0.000	0.000	0.000
	1100.00	38.284	103.795	69.790	37.406	37.406	-76.769	0.000	0.000	0.000
	1200.00	38.284	107.126	72.764	41.234	41.234	-87.317	0.000	0.000	0.000
	1300.00	38.284	110.190	75.527	45.062	45.062	-98.185	0.000	0.000	0.000
	1400.00	38.284	113.027	78.105	48.891	48.891	-109.347	0.000	0.000	0.000
	1405.00	38.284	113.164	78.230	49.082	49.082	-109.913	0.000	0.000	0.000
LIQ			6.063		8.519					
	1405.00	47.907	119.227	78.230	57.601	57.601	-109.913	0.000	0.000	0.000
	1500.00	47.907	122.362	80.927	62.152	62.152	-121.390	0.000	0.000	0.000
	1600.00	47.907	125.453	83.614	66.943	66.943	-133.782	0.000	0.000	0.000
	1700.00	47.907	128.358	86.161	71.734	71.734	-146.474	0.000	0.000	0.000
	1800.00	47.907	131.096	88.582	76.524	76.524	-159.448	0.000	0.000	0.000
	1900.00	47.907	133.686	90.889	81.315	81.315	-172.689	0.000	0.000	0.000
	2000.00	47.907	136.143	93.091	86.106	86.106	-186.181	0.000	0.000	0.000
	2100.00	47.907	138.481	95.197	90.896	90.896	-199.913	0.000	0.000	0.000
	2200.00	47.907	140.709	97.215	95.687	95.687	-213.874	0.000	0.000	0.000
	2300.00	47.907	142.839	99.153	100.478	100.478	-228.052	0.000	0.000	0.000
	2400.00	47.907	144.878	101.016	105.268	105.268	-242.439	0.000	0.000	0.000
	2500.00	47.907	146.834	102.810	110.059	110.059	-257.025	0.000	0.000	0.000
	2600.00	47.907	148.712	104.540	114.850	114.850	-271.803	0.000	0.000	0.000
	2700.00	47.907	150.520	106.209	119.640	119.640	-286.765	0.000	0.000	0.000
	2800.00	47.907	152.263	107.823	124.431	124.431	-301.905	0.000	0.000	0.000
	2900.00	47.907	153.944	109.385	129.222	129.222	-317.215	0.000	0.000	0.000
	3000.00	47.907	155.568	110.897	134.012	134.012	-332.691	0.000	0.000	0.000
	3100.00	47.907	157.139	112.364	138.803	138.803	-348.327	0.000	0.000	0.000
	3200.00	47.907	158.660	113.787	143.594	143.594	-364.118	0.000	0.000	0.000
	3300.00	47.907	160.134	115.169	148.384	148.384	-380.058	0.000	0.000	0.000
	3400.00	47.907	161.564	116.513	153.175	153.175	-396.143	0.000	0.000	0.000
	3500.00	47.907	162.953	117.820	157.966	157.966	-412.369	0.000	0.000	0.000

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [—]
LIQ	3600.00	47.907	164.302	119.092	162.757	162.757	-428.732	0.000	0.000	0.000
	3700.00	47.907	165.615	120.332	167.547	167.547	-445.228	0.000	0.000	0.000
	3800.00	47.907	166.893	121.541	172.338	172.338	-461.854	0.000	0.000	0.000
	3900.00	47.907	168.137	122.719	177.129	177.129	-478.606	0.000	0.000	0.000
	4000.00	47.907	169.350	123.870	181.919	181.919	-495.480	0.000	0.000	0.000
	4100.00	47.907	170.533	124.994	186.710	186.710	-512.475	0.000	0.000	0.000
	4200.00	47.907	171.687	126.092	191.501	191.501	-529.586	0.000	0.000	0.000
	4300.00	47.907	172.815	127.165	196.291	196.291	-546.811	0.000	0.000	0.000
	4400.00	47.907	173.916	128.215	201.082	201.082	-564.148	0.000	0.000	0.000
	4402.00	47.907	173.938	128.236	201.178	201.178	-564.496	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL-A	Hu1	Hu1	
SOL-B	Hu1	Hu1	
SOL-C	Hu1	Hu1	
LIQ	Hu1	Hu1	Hu1 BPT= 4402., L= 464.11 kJ

238.029		URANIUM (GAS)								U[g]
Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
GAS	298.15	23.693	199.787	199.787	523.000	0.000	463.434	523.000	478.428	–83.819
	300.00	23.710	199.933	199.787	523.044	0.044	463.064	522.993	478.152	–83.254
	400.00	23.953	206.811	200.723	525.435	2.435	442.711	522.516	463.272	–60.497
	500.00	23.694	212.131	202.494	527.819	4.819	421.753	521.817	448.536	–46.858
	600.00	23.408	216.425	204.469	530.173	7.173	400.318	520.837	433.967	–37.780
	700.00	23.257	220.019	206.441	532.505	9.505	378.491	519.535	419.587	–31.310
	800.00	23.360	223.130	208.337	534.835	11.835	356.331	517.879	405.417	–26.471
	900.00	23.672	225.897	210.137	537.184	14.184	333.877	515.839	391.477	–22.721
	1000.00	24.218	228.418	211.841	539.577	16.577	311.159	510.980	377.951	–19.742
	1100.00	24.955	230.759	213.455	542.034	19.034	288.199	504.629	364.968	–17.331
	1200.00	25.833	232.967	214.990	544.573	21.573	265.012	503.339	352.329	–15.336
	1300.00	26.805	235.073	216.454	547.204	24.204	241.609	502.142	339.794	–13.653
	1400.00	27.836	237.097	217.857	549.936	26.936	218.000	501.045	327.348	–12.213
	1500.00	28.895	239.053	219.205	552.772	29.772	194.192	490.620	315.582	–10.990
	1600.00	29.960	240.952	220.505	555.715	32.715	170.191	488.772	303.974	–9.924
	1700.00	31.011	242.800	221.763	558.764	35.764	146.003	487.030	292.478	–8.987
	1800.00	32.036	244.602	222.982	561.916	38.916	121.633	485.392	281.081	–8.157
	1900.00	33.023	246.361	224.166	565.169	42.169	97.084	483.855	269.773	–7.417
	2000.00	33.962	248.078	225.319	568.519	45.519	72.362	482.414	258.543	–6.752
	2100.00	34.904	249.759	226.443	571.964	48.964	47.470	481.067	247.383	–6.153
	2200.00	35.722	251.402	227.540	575.496	52.496	22.412	479.809	236.285	–5.610
	2300.00	36.443	253.006	228.613	579.105	56.105	–2.809	478.627	225.243	–5.115
	2400.00	37.090	254.571	229.662	582.782	59.782	–28.188	477.514	214.250	–4.663
	2500.00	37.676	256.097	230.689	586.521	63.521	–53.722	476.462	203.303	–4.248
	2600.00	38.214	257.585	231.695	590.316	67.316	–79.406	475.466	192.396	–3.865
	2700.00	38.712	259.037	232.681	594.162	71.162	–105.238	474.522	181.527	–3.512
	2800.00	39.176	260.453	233.647	598.057	75.057	–131.213	473.626	170.692	–3.184
	2900.00	39.612	261.836	234.596	601.997	78.997	–157.327	472.775	159.888	–2.880
	3000.00	40.024	263.186	235.526	605.979	82.979	–183.579	471.966	149.113	–2.596
	3100.00	40.414	264.505	236.440	610.001	87.001	–209.964	471.198	138.364	–2.331
	3200.00	40.786	265.794	237.337	614.061	91.061	–236.479	470.467	127.639	–2.083
	3300.00	41.141	267.054	238.219	618.157	95.157	–263.121	469.773	116.936	–1.851
	3400.00	41.480	268.287	239.085	622.288	99.288	–289.889	469.113	106.254	–1.632
	3500.00	41.806	269.494	239.937	626.453	103.453	–316.778	468.487	95.591	–1.427
	3600.00	42.118	270.677	240.774	630.649	107.649	–343.787	467.893	84.946	–1.233
	3700.00	42.418	271.835	241.598	634.876	111.876	–370.912	467.329	74.316	–1.049
	3800.00	42.706	272.970	242.409	639.132	116.132	–398.153	466.794	63.701	–0.876
	3900.00	42.983	274.083	243.207	643.417	120.417	–425.506	466.288	53.100	–0.711
	4000.00	43.249	275.174	243.992	647.728	124.728	–452.969	465.809	42.512	–0.555
	4100.00	43.504	276.245	244.766	652.066	129.066	–480.540	465.356	31.935	–0.407
	4200.00	43.750	277.297	245.528	656.429	133.429	–508.217	464.928	21.369	–0.266
	4300.00	43.985	278.329	246.279	660.816	137.816	–535.999	464.524	10.813	–0.131
	4400.00	44.210	279.343	247.019	665.226	142.226	–563.882	464.144	0.266	–0.003
	4500.00	44.426	280.339	247.748	669.657	146.657	–591.866	0.000	0.000	0.000
	4600.00	44.631	281.317	248.467	674.110	151.110	–619.949	0.000	0.000	0.000
	4700.00	44.828	282.279	249.176	678.583	155.583	–648.129	0.000	0.000	0.000
	4800.00	45.014	283.225	249.876	683.076	160.076	–676.405	0.000	0.000	0.000
	4900.00	45.192	284.155	250.566	687.586	164.586	–704.774	0.000	0.000	0.000
	5000.00	45.359	285.070	251.247	692.114	169.114	–733.235	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

UB2

URANIUM DIBORIDE

259.651

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	55.769	55.522	55.522	-161.502	0.000	-178.056	-161.502	-159.585	27.959
	300.00	56.213	55.868	55.523	-161.398	0.104	-178.159	-161.492	-159.573	27.784
	400.00	71.151	74.429	57.952	-154.911	6.591	-184.683	-160.602	-159.056	20.771
	500.00	77.316	91.058	62.949	-147.447	14.055	-192.977	-159.682	-158.781	16.588
	600.00	80.325	105.449	68.862	-139.550	21.952	-202.819	-159.080	-158.664	13.813
	700.00	82.102	117.974	75.003	-131.423	30.079	-214.004	-158.897	-158.615	11.836
	800.00	83.452	129.027	81.079	-123.143	38.359	-226.365	-159.169	-158.561	10.353
	900.00	84.758	138.931	86.966	-114.733	46.769	-239.771	-159.913	-158.446	9.196
	1000.00	86.224	147.935	92.619	-106.186	55.316	-254.121	-163.543	-158.058	8.256
	1100.00	87.963	156.232	98.030	-97.479	64.023	-269.335	-168.704	-157.247	7.467
	1200.00	90.046	163.973	103.206	-88.582	72.920	-285.349	-168.813	-156.200	6.799
	1300.00	92.515	171.275	108.164	-79.457	82.045	-302.115	-168.800	-155.149	6.234
	1400.00	95.399	178.234	112.922	-70.065	91.437	-319.593	-168.615	-154.104	5.750
	1500.00	98.718	184.927	117.501	-60.363	101.139	-337.753	-177.643	-152.474	5.310
	1600.00	102.484	191.415	121.918	-50.307	111.195	-356.571	-177.929	-150.785	4.923
	1700.00	106.709	197.753	126.193	-39.851	121.651	-376.031	-177.896	-149.088	4.581
	1800.00	111.398	203.983	130.342	-28.950	132.552	-396.118	-177.495	-147.403	4.278
	1900.00	116.557	210.142	134.381	-17.556	143.946	-416.825	-176.675	-145.752	4.007
	2000.00	122.190	216.262	138.322	-5.622	155.880	-438.146	-175.387	-144.155	3.765
	2100.00	128.299	222.369	142.179	6.898	168.400	-460.077	-173.583	-142.636	3.548
	2200.00	134.889	228.488	145.963	20.053	181.555	-482.620	-171.213	-141.215	3.353
	2300.00	141.959	234.638	149.684	33.892	195.394	-505.776	-168.227	-139.916	3.178

References

Phase	H / S	C _p
SOL	Nb1	Ku1,Tk1,e

UB4

URANIUM TETRABORIDE

281.273

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	78.911	71.128	71.128	-245.601	0.000	-266.808	-245.601	-244.860	42.899
	300.00	79.480	71.618	71.130	-245.454	0.147	-266.940	-245.590	-244.856	42.633
	400.00	100.489	97.733	74.547	-236.327	9.274	-275.420	-244.789	-244.728	31.958
	500.00	111.776	121.473	81.605	-225.667	19.934	-286.404	-244.134	-244.795	25.574
	600.00	119.235	142.549	90.041	-214.096	31.505	-299.625	-243.820	-244.962	21.326
	700.00	124.887	161.370	98.910	-201.879	43.722	-314.838	-243.857	-245.154	18.294
	800.00	129.576	178.360	107.797	-189.150	56.451	-331.838	-244.246	-245.317	16.018
	900.00	133.705	193.865	116.511	-175.982	69.619	-350.461	-244.996	-245.410	14.243
	1000.00	137.486	208.150	124.970	-162.421	83.180	-370.571	-248.536	-245.235	12.810
	1100.00	141.040	221.422	133.142	-148.493	97.108	-392.057	-253.537	-244.650	11.617
	1200.00	144.440	233.841	141.022	-134.218	111.383	-414.827	-253.446	-243.846	10.614

References

Phase	H / S	C _p
SOL	Ra1	e

367.761

URANIUM DODECABORIDE

UB12

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	169.580	139.746	139.746	-396.999	0.000	-438.664	-396.999	-402.811	70.571
	300.00	171.373	140.800	139.749	-396.684	0.315	-438.924	-396.987	-402.847	70.142
	400.00	234.938	200.085	147.400	-375.925	21.074	-455.959	-395.474	-405.004	52.888
	500.00	265.182	256.115	163.636	-350.759	46.240	-478.817	-394.157	-407.556	42.577
	600.00	282.310	306.107	183.299	-323.314	73.685	-506.978	-393.814	-410.285	35.718
	700.00	293.246	350.502	204.075	-294.500	102.499	-539.852	-394.494	-412.990	30.818
	800.00	300.881	390.185	224.903	-264.773	132.226	-576.922	-396.150	-415.531	27.131
	900.00	306.598	425.969	245.289	-234.387	162.612	-617.759	-398.739	-417.808	24.249
	1000.00	311.122	458.514	265.009	-203.493	193.506	-662.008	-404.646	-419.583	21.917
	1100.00	314.868	488.348	283.975	-172.188	224.811	-709.371	-412.510	-420.688	19.977
	1200.00	318.084	515.887	302.168	-140.537	256.462	-759.601	-415.754	-421.291	18.338

References

Phase	H / S	C _p
SOL	Nb1/Ra1	e

477.741

URANIUM TRIBROMIDE

UBr3

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	108.704	192.464	192.464	-699.146	0.000	-756.529	-699.146	-673.463	117.988
	300.00	108.752	193.137	192.466	-698.945	0.201	-756.886	-699.206	-673.303	117.232
	400.00	111.389	224.784	196.763	-687.938	11.208	-777.851	-742.790	-655.566	85.608
	500.00	114.022	249.922	204.965	-676.667	22.479	-801.628	-740.140	-634.066	66.240
	600.00	116.653	270.944	214.256	-665.133	34.013	-827.700	-737.518	-613.099	53.375
	700.00	119.284	289.123	223.681	-653.337	45.809	-855.723	-734.959	-592.566	44.218
	800.00	121.915	305.223	232.887	-641.277	57.869	-885.455	-732.506	-572.393	37.373
	900.00	124.545	319.735	241.743	-628.954	70.192	-916.715	-730.208	-552.518	32.067
	1000.00	127.176	332.993	250.215	-616.368	82.778	-949.361	-730.523	-532.725	27.827
			43.932		43.932					
LIQ	1000.00	132.633	376.925	250.215	-572.436	126.710	-949.361	-686.591	-532.725	27.827
	1100.00	132.633	389.566	262.317	-559.172	139.974	-987.695	-687.795	-517.269	24.563
	1200.00	132.633	401.107	273.409	-545.909	153.237	-1027.237	-684.030	-501.933	21.849
	1300.00	132.633	411.723	283.646	-532.646	166.500	-1067.886	-680.273	-486.911	19.564
	1400.00	132.633	421.552	293.150	-519.383	179.763	-1109.556	-676.525	-472.177	17.617
	1500.00	132.633	430.703	302.018	-506.119	193.027	-1152.174	-682.219	-457.105	15.918
	1600.00	132.633	439.263	310.332	-492.856	206.290	-1195.676	-679.450	-442.188	14.436
	1700.00	132.633	447.304	318.155	-479.593	219.553	-1240.009	-676.690	-427.443	13.134
	1800.00	132.633	454.885	325.542	-466.329	232.817	-1285.122	-673.936	-412.861	11.981

References

Phase	H / S	C _p
SOL	Nb1	Pa2
LIQ	Ra1	e

UBr4

URANIUM TETRABROMIDE

557.645

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	128.115	238.501	238.501	-802.500	0.000	-873.609	-802.500	-767.852	134.524
	300.00	128.169	239.293	238.503	-802.263	0.237	-874.051	-802.594	-767.637	133.657
	400.00	131.125	276.569	243.566	-789.298	13.202	-899.926	-861.462	-743.732	97.121
	500.00	134.094	306.148	253.223	-776.038	26.462	-929.112	-858.668	-714.623	74.656
	600.00	137.069	330.859	264.158	-762.479	40.021	-960.995	-855.881	-686.076	59.728
	700.00	140.046	352.212	275.246	-748.624	53.876	-995.172	-853.130	-657.994	49.100
	792.00	142.787	369.671	285.218	-735.613	66.887	-1028.393	-850.667	-632.504	41.715
LIQ			61.280		48.534					
	792.00	171.544	430.951	285.218	-687.079	115.421	-1028.393	-802.133	-632.504	41.715
	800.00	171.544	432.675	286.684	-685.707	116.793	-1031.847	-801.694	-630.792	41.187
	900.00	171.544	452.880	304.050	-668.553	133.947	-1076.145	-796.443	-609.750	35.389
	1000.00	171.544	470.954	319.852	-651.398	151.102	-1122.352	-794.073	-589.102	30.772
	1040.00	171.544	477.682	325.794	-644.537	157.963	-1141.326	-791.945	-580.946	29.178

References

Phase	H / S	C _p	Remarks
SOL	Nb1	Pa2	
LIQ	Pa2	Pa2	Pa2 NBPT= 1040.

UBr4[g]

URANIUM TETRABROMIDE (GAS)

557.645

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	119.616	458.559	458.559	-593.300	0.000	-730.019	-593.300	-624.262	109.368
	300.00	119.807	459.299	458.561	-593.079	0.221	-730.868	-593.410	-624.454	108.727
	400.00	126.520	494.823	463.359	-580.714	12.586	-778.644	-652.878	-622.450	81.284
	500.00	129.629	523.428	472.607	-567.890	25.410	-829.603	-650.520	-615.115	64.261
	600.00	131.318	547.225	483.116	-554.835	38.465	-883.170	-648.236	-608.251	52.953
	700.00	132.337	567.551	493.762	-541.648	51.652	-938.933	-646.154	-601.755	44.904
	800.00	132.999	585.268	504.117	-528.379	64.921	-996.593	-644.366	-595.539	38.885
	900.00	133.454	600.961	514.022	-515.055	78.245	-1055.920	-642.946	-589.525	34.215
	1000.00	133.779	615.039	523.432	-501.692	91.608	-1116.732	-644.367	-583.482	30.478
	1100.00	134.021	627.802	532.349	-488.302	104.998	-1178.884	-647.330	-577.238	27.411
	1200.00	134.204	639.471	540.796	-474.890	118.410	-1242.256	-645.306	-570.956	24.853
	1300.00	134.348	650.219	548.806	-461.462	131.838	-1306.747	-643.278	-564.842	22.696
	1400.00	134.462	660.180	556.410	-448.022	145.278	-1372.273	-641.249	-558.885	20.852
	1500.00	134.555	669.460	563.640	-434.571	158.729	-1438.761	-648.653	-552.466	19.239
	1600.00	134.631	678.147	570.528	-421.111	172.189	-1506.146	-647.590	-546.088	17.828
	1700.00	134.694	686.310	577.101	-407.645	185.655	-1574.372	-646.529	-539.777	16.585
	1800.00	134.747	694.011	583.385	-394.173	199.127	-1643.392	-645.474	-533.528	15.483
	1900.00	134.793	701.297	589.400	-380.696	212.604	-1713.161	-644.424	-527.337	14.498
	2000.00	134.831	708.212	595.170	-367.214	226.086	-1783.639	-643.379	-521.202	13.612

References

Phase	H / S	C _p
GAS	Nb1/e	e

637.549

URANIUM PENTABROMIDE

UBr5

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	160.676	292.880	292.880	-810.859	0.000	-898.181	-810.859	-769.733	134.854
	300.00	160.815	293.874	292.883	-810.562	0.297	-898.724	-810.963	-769.478	133.978
	400.00	166.963	341.034	299.271	-794.154	16.705	-930.568	-883.629	-740.465	96.695
	500.00	171.711	378.815	311.525	-777.214	33.645	-966.621	-879.001	-705.207	73.672

References

Phase	H / S	C _p
SOL	Nb1	Nb1,e

250.040

URANIUM MONOCARBIDE

UC

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	50.126	59.204	59.204	-97.906	0.000	-115.558	-97.906	-98.852	17.318
	300.00	50.265	59.514	59.205	-97.813	0.093	-115.667	-97.880	-98.858	17.213
	400.00	55.181	74.747	61.248	-92.507	5.399	-122.405	-96.479	-99.396	12.980
	500.00	57.564	87.342	65.245	-86.858	11.048	-130.529	-95.243	-100.273	10.475
	600.00	59.010	97.974	69.837	-81.024	16.882	-139.808	-94.324	-101.372	8.825
	700.00	60.061	107.152	74.527	-75.068	22.838	-150.075	-93.781	-102.595	7.656
	800.00	60.942	115.231	79.120	-69.017	28.889	-161.202	-93.640	-103.868	6.782
	900.00	61.757	122.456	83.541	-62.882	35.024	-173.093	-93.926	-105.134	6.102
	1000.00	62.564	129.005	87.765	-56.666	41.240	-185.671	-97.082	-106.180	5.546
	1100.00	63.394	135.007	91.791	-50.369	47.537	-198.876	-101.782	-106.850	5.074
	1200.00	64.266	140.560	95.626	-43.986	53.920	-212.657	-101.473	-107.324	4.672
	1300.00	65.192	145.740	99.284	-37.514	60.392	-226.975	-101.121	-107.826	4.332
	1400.00	66.179	150.607	102.778	-30.946	66.960	-241.795	-100.710	-108.357	4.043
	1500.00	67.235	155.208	106.121	-24.276	73.630	-257.088	-109.661	-108.313	3.772
	1600.00	68.361	159.583	109.327	-17.496	80.410	-272.829	-110.056	-108.210	3.533
	1700.00	69.561	163.763	112.407	-10.601	87.305	-288.998	-110.355	-108.085	3.321
	1800.00	70.838	167.775	115.372	-3.582	94.324	-305.576	-110.547	-107.945	3.132
	1900.00	72.191	171.641	118.233	3.569	101.475	-322.548	-110.622	-107.798	2.964
	2000.00	73.624	175.380	120.997	10.859	108.765	-339.900	-110.569	-107.650	2.812
	2100.00	75.136	179.008	123.673	18.297	116.203	-357.620	-110.382	-107.508	2.674
	2200.00	76.729	182.540	126.269	25.889	123.795	-375.698	-110.050	-107.378	2.549
	2300.00	78.402	185.987	128.791	33.645	131.551	-394.125	-109.564	-107.267	2.436
	2400.00	80.158	189.361	131.245	41.572	139.478	-412.893	-108.915	-107.181	2.333
	2500.00	81.995	192.670	133.636	49.679	147.585	-431.995	-108.095	-107.125	2.238
	2600.00	83.915	195.923	135.969	57.974	155.880	-451.425	-107.094	-107.105	2.152
	2700.00	85.917	199.127	138.249	66.465	164.371	-471.178	-105.904	-107.127	2.073
	2800.00	88.003	202.289	140.480	75.160	173.066	-491.250	-104.518	-107.197	2.000
	2900.00	90.172	205.415	142.665	84.068	181.974	-511.635	-102.925	-107.321	1.933
	3000.00	92.424	208.510	144.808	93.197	191.103	-532.331	-101.117	-107.502	1.872

References

Phase	H / S	C _p
SOL	Pa3	Pa3

UC1.94

URANIUM 1.94-CARBIDE

261.330

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	60.752	71.044	71.044	-87.027	0.000	-108.209	-87.027	-89.894	15.749
	300.00	60.953	71.421	71.045	-86.914	0.113	-108.341	-86.996	-89.912	15.655
	400.00	68.340	90.099	73.542	-80.404	6.623	-116.444	-85.366	-91.132	11.901
	500.00	72.380	105.817	78.469	-73.353	13.674	-126.261	-83.979	-92.742	9.689
	600.00	75.161	119.272	84.175	-65.969	21.058	-137.532	-82.995	-94.594	8.235
	700.00	77.362	131.028	90.046	-58.339	28.688	-150.059	-82.450	-96.576	7.207
	800.00	79.256	141.485	95.834	-50.507	36.520	-163.694	-82.335	-98.607	6.438
	900.00	80.972	150.920	101.439	-42.494	44.533	-178.322	-82.655	-100.627	5.840
	1000.00	82.576	159.535	106.824	-34.316	52.711	-193.851	-85.841	-102.422	5.350
	1100.00	84.105	167.478	111.982	-25.981	61.046	-210.207	-90.561	-103.840	4.931
	1200.00	85.584	174.860	116.918	-17.497	69.530	-227.328	-90.261	-105.060	4.573
	1300.00	87.026	181.767	121.643	-8.866	78.161	-245.163	-89.905	-106.307	4.271
	1400.00	88.441	188.268	126.172	-0.092	86.935	-263.668	-89.478	-107.584	4.014
	1500.00	89.838	194.418	130.519	8.822	95.849	-282.805	-98.403	-108.289	3.771
	1600.00	91.221	200.260	134.696	17.875	104.902	-302.541	-98.765	-108.935	3.556
	1700.00	92.594	205.832	138.718	27.066	114.093	-322.848	-99.029	-109.562	3.366
	1800.00	93.961	211.163	142.596	36.393	123.420	-343.700	-99.187	-110.177	3.197

References

Phase	H / S	C _p
SOL	Pa3	Pa3

Phase	T [K]	C _p [————— J / (K mol) —————]	S —(G-H298)/T [————— kJ / mol —————]	H —(G-H298) [————— kJ / mol —————]	H-H298	G	ΔH _f	ΔG _f	log K _r [— —]	
SOL	298.15	107.361	137.779	137.779	-181.586	0.000	-222.665	-181.586	-187.541	32.856
	300.00	107.721	138.444	137.781	-181.387	0.199	-222.920	-181.537	-187.579	32.660
	400.00	119.958	171.382	142.189	-169.909	11.677	-238.461	-178.906	-189.994	24.811
	500.00	125.424	198.802	150.851	-157.610	23.976	-257.012	-176.765	-193.028	20.166
	600.00	128.735	221.979	160.825	-144.893	36.693	-278.081	-175.458	-196.419	17.100
	700.00	131.465	242.031	171.025	-131.882	49.704	-301.304	-175.050	-199.957	14.921
	800.00	134.271	259.766	181.030	-118.597	62.989	-326.410	-175.508	-203.494	13.287
	900.00	137.468	275.760	190.681	-105.015	76.571	-353.199	-176.802	-206.923	12.009
	1000.00	141.219	290.433	199.932	-91.085	90.501	-381.518	-183.735	-209.836	10.961
	1100.00	145.620	304.094	208.787	-76.749	104.837	-411.252	-193.582	-211.944	10.064
	1200.00	150.727	316.978	217.271	-61.938	119.648	-442.311	-193.164	-213.629	9.299
	1300.00	156.576	329.268	225.417	-46.579	135.007	-474.628	-192.337	-215.364	8.653
	1400.00	163.191	341.109	233.260	-30.597	150.989	-508.150	-190.999	-217.182	8.103
	1500.00	170.587	352.616	240.835	-13.915	167.671	-542.838	-207.918	-217.904	7.588
	1600.00	178.778	363.883	248.174	3.547	185.133	-578.665	-207.190	-218.589	7.136
	1700.00	187.770	374.987	255.308	21.868	203.454	-615.610	-205.662	-219.344	6.740
	1800.00	197.571	385.993	262.263	41.128	222.714	-653.659	-203.245	-220.214	6.390
	1900.00	208.185	396.956	269.064	61.409	242.995	-692.807	-199.849	-221.245	6.082
	2000.00	219.617	407.921	275.732	82.792	264.378	-733.050	-195.389	-222.481	5.811

References

Phase	H / S	C _p
SOL	Pa3	Pa3

Phase	T [K]	C _p [— J / (K mol)]	S [— J / (K mol)]	-(G-H298)/T [—]	H [— kJ / mol]	H-H298 [— kJ / mol]	G [— kJ / mol]	ΔH _f [— kJ / mol]	ΔG _f [— kJ / mol]	log K _f [—]
SOL	298.15	102.521	158.992	158.992	-861.904	0.000	-909.307	-861.904	-794.530	139.198
	300.00	102.512	159.626	158.994	-861.714	0.190	-909.602	-861.860	-794.112	138.267
	400.00	103.265	189.172	163.017	-851.442	10.462	-927.111	-859.657	-771.870	100.796
	500.00	105.286	212.418	170.652	-841.021	20.883	-947.230	-857.674	-750.156	78.368
	600.00	107.806	231.832	179.273	-830.369	31.535	-969.468	-855.809	-728.829	63.450
	700.00	110.561	248.655	188.009	-819.452	42.452	-993.510	-854.042	-707.807	52.817
	800.00	113.442	263.605	196.541	-808.253	53.651	-1019.137	-852.386	-687.030	44.858
	900.00	116.396	277.137	204.756	-796.761	65.143	-1046.184	-850.872	-666.454	38.680
	1000.00	119.395	289.555	212.623	-784.972	76.932	-1074.527	-851.947	-645.872	33.737
	1100.00	122.423	301.077	220.147	-772.881	89.023	-1104.066	-854.295	-625.137	29.685
	1110.00	122.727	302.186	220.881	-771.656	90.248	-1107.082	-854.016	-623.055	29.320
LIQ			41.840		46.442					
	1110.00	129.704	344.026	220.881	-725.214	136.690	-1107.082	-807.574	-623.055	29.320
	1200.00	129.704	354.137	230.501	-713.540	148.364	-1138.505	-804.428	-608.218	26.475
	1300.00	129.704	364.519	240.416	-700.570	161.334	-1174.445	-800.946	-592.009	23.787
	1400.00	129.704	374.131	249.628	-687.599	174.305	-1211.383	-797.475	-576.067	21.493
	1500.00	129.704	383.080	258.230	-674.629	187.275	-1249.249	-803.449	-559.766	19.493
	1600.00	129.704	391.451	266.298	-661.659	200.245	-1287.980	-800.964	-543.602	17.747
	1700.00	129.704	399.314	273.893	-648.688	213.216	-1327.522	-798.489	-527.593	16.211
	1800.00	129.704	406.728	281.069	-635.718	226.186	-1367.828	-796.024	-511.729	14.850
	1900.00	129.704	413.741	287.869	-622.747	239.157	-1408.855	-793.571	-496.002	13.636
	2000.00	129.704	420.394	294.330	-609.777	252.127	-1450.564	-791.129	-480.403	12.547

References

Phase	H / S	C _p
SOL	Pa2	Pa2
LIQ	Ra1	e

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	121.854	197.100	197.100	-1019.201	0.000	-1077.966	-1019.201	-929.927	162.919
	300.00	121.928	197.854	197.102	-1018.976	0.225	-1078.332	-1019.152	-929.374	161.818
	400.00	125.978	233.485	201.933	-1006.580	12.621	-1099.974	-1016.560	-899.840	117.507
	500.00	130.028	262.031	211.189	-993.780	25.421	-1124.796	-1013.983	-870.958	90.988
	600.00	134.077	286.096	221.719	-980.575	38.626	-1152.232	-1011.383	-842.596	73.355
	700.00	138.127	307.068	232.445	-966.964	52.237	-1181.912	-1008.761	-814.672	60.792
	800.00	142.176	325.777	242.962	-952.949	66.252	-1213.571	-1006.141	-787.124	51.394
	863.00	144.727	336.650	249.409	-943.912	75.289	-1234.441	-1004.509	-769.940	46.602
LIQ			52.846		45.606					
	863.00	159.943	389.496	249.409	-898.306	120.895	-1234.441	-958.903	-769.940	46.602
	900.00	162.172	396.256	255.307	-892.347	126.854	-1248.978	-957.379	-761.870	44.218
	1000.00	168.197	413.655	270.282	-875.828	143.373	-1289.483	-955.596	-740.207	38.664

References

Phase	H / S	C _p
SOL	Nb1	Pa2
LIQ	Pa2	Pa2

UCI4[g]

URANIUM TETRACHLORIDE (GAS)

379.840

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		J / (K mol)			kJ / mol					[-]
GAS	298.15	127.528	419.003	419.003	-809.600	0.000	-934.526	-809.600	-786.487	137.789
	300.00	127.645	419.792	419.006	-809.364	0.236	-935.302	-809.541	-786.344	136.915
	400.00	131.754	457.160	424.073	-796.365	13.235	-979.229	-806.344	-779.095	101.739
	500.00	133.679	486.790	433.756	-783.083	26.517	-1026.478	-803.286	-772.640	80.717
	600.00	134.743	511.265	444.694	-769.657	39.943	-1076.416	-800.465	-766.780	66.754
	700.00	135.402	532.089	455.729	-756.147	53.453	-1128.610	-797.944	-761.370	56.814
	800.00	135.844	550.200	466.430	-742.584	67.016	-1182.744	-795.776	-756.298	49.381
	900.00	136.160	566.220	476.645	-728.983	80.617	-1238.581	-794.015	-751.473	43.614
	1000.00	136.398	580.579	486.333	-715.354	94.246	-1295.933	-795.122	-746.656	39.001
	1100.00	136.585	593.588	495.501	-701.705	107.895	-1354.651	-797.788	-741.669	35.219
	1200.00	136.738	605.479	504.178	-688.038	121.562	-1414.613	-795.478	-736.670	32.066
	1300.00	136.866	616.429	512.397	-674.358	135.242	-1475.716	-793.172	-731.863	29.407
	1400.00	136.976	626.576	520.195	-660.666	148.934	-1537.872	-790.870	-727.233	27.133
	1500.00	137.072	636.030	527.605	-646.963	162.637	-1601.008	-798.007	-722.161	25.148
	1600.00	137.159	644.879	534.661	-633.252	176.348	-1665.058	-796.678	-717.148	23.412
	1700.00	137.239	653.197	541.392	-619.532	190.068	-1729.966	-795.355	-712.218	21.884
	1800.00	137.312	661.043	547.823	-605.804	203.796	-1795.682	-794.038	-707.366	20.527
	1900.00	137.380	668.469	553.979	-592.070	217.530	-1862.161	-792.729	-702.586	19.315
	2000.00	137.444	675.517	559.881	-578.328	231.272	-1929.363	-791.429	-697.876	18.227
	2100.00	137.506	682.225	565.549	-564.581	245.019	-1997.253	-790.137	-693.230	17.243
	2200.00	137.564	688.623	570.999	-550.827	258.773	-2065.798	-788.854	-688.645	16.351

References

Phase	H / S	C _p
GAS	Nb1	e

UCI5

URANIUM PENTACHLORIDE

415.292

Phase	T [K]	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
		J / (K mol)			kJ / mol					[-]
SOL	298.15	144.580	242.701	242.701	-1059.000	0.000	-1131.361	-1059.000	-950.061	166.447
	300.00	144.719	243.596	242.704	-1058.732	0.268	-1131.811	-1058.941	-949.386	165.303
	400.00	150.867	286.125	248.461	-1043.934	15.066	-1158.384	-1055.679	-913.357	119.272
	500.00	155.616	320.315	259.522	-1028.604	30.396	-1188.761	-1052.357	-878.159	91.741
	600.00	159.814	349.063	272.112	-1012.829	46.171	-1222.267	-1049.005	-843.634	73.445
LIQ			59.273		35.564					
	600.00	186.690	408.337	272.112	-977.265	81.735	-1222.267	-1013.441	-843.634	73.445
	700.00	186.690	437.115	293.681	-958.596	100.404	-1264.577	-1007.599	-815.801	60.876
	800.00	186.690	462.044	313.203	-939.927	119.073	-1309.563	-1002.178	-788.776	51.502

References

Phase	H / S	C _p
SOL	Nb1	e
LIQ	e	e

415.292

URANIUM PENTACHLORIDE (GAS)

UCI5[g]

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	143.095	435.798	435.798	-926.714	0.000	-1056.647	-926.714	-875.347	153.357
	300.00	143.240	436.683	435.800	-926.449	0.265	-1057.454	-926.657	-875.029	152.356
	400.00	148.367	478.698	441.494	-911.832	14.882	-1103.312	-923.577	-858.284	112.080
	500.00	150.762	512.091	452.389	-896.863	29.851	-1152.909	-920.617	-842.307	87.995
	600.00	152.082	539.706	464.707	-881.715	44.999	-1205.538	-917.891	-826.906	71.989
	700.00	152.895	563.215	477.142	-866.463	60.251	-1260.714	-915.466	-811.938	60.588
	800.00	153.437	583.669	489.208	-851.145	75.569	-1318.080	-913.396	-797.294	52.058
	900.00	153.822	601.765	500.728	-835.781	90.933	-1377.369	-911.735	-782.885	45.437
	1000.00	154.109	617.987	511.657	-820.384	106.330	-1438.371	-912.944	-768.473	40.141
	1100.00	154.333	632.686	522.002	-804.961	121.753	-1500.916	-915.713	-753.880	35.799
	1200.00	154.513	646.123	531.793	-789.519	137.195	-1564.866	-913.509	-739.266	32.179
	1300.00	154.662	658.496	541.070	-774.060	152.654	-1630.105	-911.311	-724.835	29.124
	1400.00	154.789	669.963	549.872	-758.587	168.127	-1696.535	-909.119	-710.572	26.512
	1500.00	154.900	680.646	558.238	-743.102	183.612	-1764.072	-916.368	-695.861	24.232
	1600.00	154.998	690.646	566.205	-727.607	199.107	-1832.641	-915.154	-681.200	22.239
	1700.00	155.086	700.046	573.804	-712.103	214.611	-1902.181	-913.948	-666.615	20.483
	1800.00	155.167	708.912	581.066	-696.590	230.124	-1972.633	-912.752	-652.100	18.923
	1900.00	155.242	717.304	588.018	-681.070	245.644	-2043.947	-911.566	-637.652	17.530
	2000.00	155.312	725.269	594.683	-665.542	261.172	-2116.079	-910.391	-623.266	16.278

References

Phase	H / S	C _p
GAS	e	e

450.745

URANIUM HEXACHLORIDE

UCI6

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	175.700	285.801	285.801	-1091.999	0.000	-1177.210	-1091.999	-962.649	168.652
	300.00	175.867	286.888	285.804	-1091.674	0.325	-1177.740	-1091.913	-961.847	167.472
	400.00	182.974	338.529	292.797	-1073.706	18.293	-1209.118	-1087.215	-919.196	120.035
	452.00	185.801	361.065	299.378	-1064.116	27.883	-1227.318	-1084.740	-897.508	103.719
LIQ			46.283		20.920					
	452.00	213.970	407.348	299.378	-1043.196	48.803	-1227.318	-1063.820	-897.508	103.719
	500.00	213.970	428.943	310.797	-1032.926	59.073	-1247.397	-1060.230	-880.032	91.936
	600.00	213.970	467.955	333.838	-1011.529	80.470	-1292.302	-1053.073	-844.672	73.535

References

Phase	H / S	C _p
SOL	Nb1	Ra1,e
LIQ	e	e

UCI6[g]

URANIUM HEXACHLORIDE (GAS)

450.745

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
GAS	298.15	166.596	430.999	430.999	-1013.001	0.000	-1141.503	-1013.001	-926.942	162.396
	300.00	166.742	432.030	431.002	-1012.693	0.308	-1142.302	-1012.932	-926.408	161.302
	400.00	171.868	480.805	437.617	-995.726	17.275	-1188.048	-1009.235	-898.127	117.283
	500.00	174.264	519.443	450.253	-978.406	34.595	-1238.128	-1005.710	-870.762	90.968
	600.00	175.584	551.342	464.521	-960.908	52.093	-1291.713	-1002.452	-844.083	73.484
	700.00	176.397	578.474	478.910	-943.306	69.695	-1348.238	-999.515	-817.926	61.034
	800.00	176.939	602.066	492.862	-925.638	87.363	-1407.291	-996.948	-792.164	51.723
	900.00	177.324	622.930	506.177	-907.923	105.078	-1468.561	-994.800	-766.700	44.498
	1000.00	177.611	641.629	518.804	-890.176	122.825	-1531.805	-995.529	-741.286	38.721
	1100.00	177.834	658.568	530.752	-872.403	140.598	-1596.828	-997.825	-715.739	33.988
	1200.00	178.014	674.049	542.057	-854.611	158.390	-1663.470	-995.153	-690.213	30.044
	1300.00	178.163	688.304	552.766	-836.802	176.199	-1731.597	-992.491	-664.909	26.716
	1400.00	178.290	701.512	562.925	-818.979	194.022	-1801.096	-989.840	-639.810	23.872
	1500.00	178.401	713.817	572.579	-801.144	211.857	-1871.869	-996.633	-614.294	21.392
	1600.00	178.499	725.334	581.770	-783.299	229.702	-1943.833	-994.966	-588.859	19.224
	1700.00	178.588	736.158	590.536	-765.445	247.556	-2016.913	-993.312	-563.528	17.315
	1800.00	178.669	746.368	598.913	-747.582	265.419	-2091.044	-991.671	-538.294	15.621
	1900.00	178.744	756.030	606.930	-729.711	283.290	-2166.168	-990.043	-513.151	14.108
	2000.00	178.814	765.200	614.616	-711.833	301.168	-2242.234	-988.431	-488.093	12.748

References

Phase	H / S	C _p
GAS	Nb1	e

UF3

URANIUM TRIFLUORIDE

295.024

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
kJ / mol										
SOL	298.15	95.088	123.428	123.428	-1508.750	0.000	-1545.550	-1508.750	-1439.861	252.258
	300.00	95.144	124.016	123.430	-1508.574	0.176	-1545.779	-1508.712	-1439.433	250.628
	400.00	98.198	151.806	127.198	-1498.907	9.843	-1559.629	-1506.734	-1416.642	184.995
	500.00	101.253	174.046	134.415	-1488.934	19.816	-1575.958	-1504.888	-1394.336	145.665
	600.00	104.307	192.777	142.621	-1478.656	30.094	-1594.323	-1503.154	-1372.390	119.477
	700.00	107.361	209.085	150.975	-1468.073	40.677	-1614.433	-1501.530	-1350.726	100.792
	800.00	110.416	223.621	159.163	-1457.184	51.566	-1636.081	-1500.036	-1329.286	86.793
	900.00	113.470	236.802	167.069	-1445.990	62.760	-1659.112	-1498.702	-1308.024	75.916
	1000.00	116.524	248.916	174.656	-1434.490	74.260	-1683.406	-1499.975	-1286.736	67.212

References

Phase	H / S	C _p
SOL	Pa2	Pa2

314.023

URANIUM TETRAFLUORIDE

UF4

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
[————— kJ / mol —————]										
SOL	298.15	116.025	151.670	151.670	-1920.874	0.000	-1966.094	-1920.874	-1830.173	320.639
	300.00	116.171	152.388	151.672	-1920.659	0.215	-1966.376	-1920.826	-1829.611	318.564
	400.00	121.628	186.648	156.306	-1908.737	12.137	-1983.397	-1918.200	-1799.601	235.004
	500.00	124.671	214.142	165.215	-1896.411	24.463	-2003.481	-1915.682	-1770.246	184.936
	600.00	126.763	237.066	175.332	-1883.834	37.040	-2026.073	-1913.385	-1741.379	151.601
	700.00	128.407	256.734	185.589	-1871.073	49.801	-2050.787	-1911.359	-1712.876	127.816
	800.00	129.811	273.974	195.582	-1858.160	62.714	-2077.340	-1909.644	-1684.642	109.996
	900.00	131.077	289.338	205.161	-1845.115	75.759	-2105.519	-1908.283	-1656.602	96.147
	1000.00	132.256	303.210	214.284	-1831.948	88.926	-2135.158	-1909.729	-1628.529	85.066
	1100.00	133.379	315.868	222.952	-1818.666	102.208	-2166.121	-1912.668	-1600.255	75.990
	1200.00	134.463	327.520	231.186	-1805.273	115.601	-2198.298	-1910.560	-1571.946	68.425
	1300.00	135.521	338.325	239.017	-1791.774	129.100	-2231.597	-1908.383	-1543.816	62.031
	1309.00	135.615	339.260	239.703	-1790.554	130.320	-2234.646	-1908.183	-1541.293	61.504
			35.895		46.986					
LIQ	1309.00	165.561	375.155	239.703	-1743.568	177.306	-2234.646	-1861.197	-1541.293	61.504
	1400.00	165.561	386.282	248.873	-1728.502	192.372	-2269.297	-1856.464	-1519.215	56.683

References

Phase	H / S	C _p
SOL	Pa2	Pa2
LIQ	Pa2	Pa2

314.023

URANIUM TETRAFLUORIDE (GAS)

UF4[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
[————— kJ / mol —————]										
GAS	298.15	91.274	369.875	369.875	-1605.401	0.000	-1715.679	-1605.401	-1579.758	276.767
	300.00	91.452	370.440	369.876	-1605.232	0.169	-1716.364	-1605.399	-1579.599	275.033
	400.00	97.798	397.743	373.556	-1595.726	9.675	-1754.823	-1605.189	-1571.028	205.155
	500.00	100.881	419.932	380.683	-1585.776	19.625	-1795.743	-1605.048	-1562.508	163.234
	600.00	102.680	438.497	388.814	-1575.591	29.810	-1838.690	-1605.143	-1553.995	135.287
	700.00	103.872	454.420	397.076	-1565.260	40.141	-1883.354	-1605.547	-1545.443	115.322
	800.00	104.741	468.349	405.133	-1554.828	50.573	-1929.507	-1606.311	-1536.810	100.343
	900.00	105.422	480.727	412.857	-1544.318	61.083	-1976.973	-1607.487	-1528.056	88.686
	1000.00	105.986	491.864	420.210	-1533.747	71.654	-2025.611	-1611.528	-1518.983	79.344
	1100.00	106.474	501.989	427.192	-1523.124	82.277	-2075.312	-1617.126	-1509.446	71.678
	1200.00	106.910	511.273	433.817	-1512.454	92.947	-2125.981	-1617.741	-1499.630	65.277
	1300.00	107.310	519.846	440.109	-1501.743	103.658	-2177.543	-1618.352	-1489.762	59.859
	1400.00	107.683	527.812	446.092	-1490.993	114.408	-2229.930	-1618.956	-1479.848	55.214
	1500.00	108.036	535.254	451.791	-1480.207	125.194	-2283.088	-1628.985	-1469.285	51.165

References

Phase	H / S	C _p
GAS	Pa2	Pa2

UF4.25

URANIUM 4.25-FLUORIDE

318.772

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	121.820	157.695	157.695	-1962.296	0.000	-2009.313	-1962.296	-1865.834	326.886
	300.00	121.965	158.449	157.697	-1962.070	0.226	-2009.605	-1962.245	-1865.235	324.766
	400.00	127.423	194.376	162.559	-1949.569	12.727	-2027.319	-1959.441	-1833.322	239.407
	500.00	130.465	223.163	171.897	-1936.663	25.633	-2048.244	-1956.763	-1802.106	188.265
	600.00	132.558	247.144	182.495	-1923.507	38.789	-2071.793	-1954.322	-1771.408	154.215
	700.00	134.202	267.705	193.234	-1910.166	52.130	-2097.560	-1952.160	-1741.098	129.922

References

Phase	H / S	C _p
SOL	Nb1	e

UF4.5

URANIUM 4.5-FLUORIDE

323.522

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	127.619	164.850	164.850	-2008.320	0.000	-2057.470	-2008.320	-1906.433	333.999
	300.00	127.764	165.639	164.852	-2008.084	0.236	-2057.776	-2008.265	-1905.801	331.829
	400.00	133.222	203.235	169.941	-1995.002	13.318	-2076.296	-2005.283	-1872.096	244.471
	500.00	136.265	233.315	179.708	-1981.516	26.804	-2098.174	-2002.446	-1839.133	192.133
	600.00	138.357	258.354	190.787	-1967.780	40.540	-2122.792	-1999.859	-1806.717	157.289
	700.00	140.001	279.809	202.009	-1953.860	54.460	-2149.726	-1997.560	-1774.713	132.431

References

Phase	H / S	C _p
SOL	Nb1	e

333.021		URANIUM PENTAFLUORIDE								UF5
Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-B	298.15	139.229	179.494	179.494	-2083.214	0.000	-2136.730	-2083.214	-1970.577	345.237
	300.00	139.375	180.355	179.496	-2082.956	0.258	-2137.063	-2083.152	-1969.879	342.986
	400.00	144.832	221.291	185.041	-2068.714	14.500	-2157.230	-2079.812	-1932.626	252.375
	500.00	147.875	253.962	195.668	-2054.067	29.147	-2181.048	-2076.655	-1896.200	198.095
	600.00	149.968	281.117	207.710	-2039.170	44.044	-2207.840	-2073.775	-1860.384	161.961

References

Phase	H / S	C _p
SOL-B	Nb1	e

333.021		URANIUM PENTAFLUORIDE (GAS)								UF5[g]
Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	109.713	389.000	389.000	-1937.000	0.000	-2052.980	-1937.000	-1886.827	330.564
	300.00	109.912	389.679	389.002	-1936.797	0.203	-2053.701	-1936.993	-1886.516	328.472
	400.00	118.086	422.530	393.425	-1925.358	11.642	-2094.370	-1936.456	-1869.766	244.166
	500.00	122.767	449.429	402.019	-1913.295	23.705	-2138.009	-1935.883	-1853.161	193.598
	600.00	125.607	472.083	411.858	-1900.865	36.135	-2184.115	-1935.470	-1836.659	159.895
	700.00	127.439	491.593	421.888	-1888.207	48.793	-2232.321	-1935.322	-1820.207	135.825
	800.00	128.681	508.696	431.692	-1875.397	61.603	-2282.354	-1935.512	-1803.753	117.773
	900.00	129.558	523.906	441.109	-1862.483	74.517	-2333.998	-1936.107	-1787.252	103.729
	1000.00	130.198	537.591	450.084	-1849.493	87.507	-2387.084	-1939.570	-1770.496	92.481
	1100.00	130.677	550.024	458.613	-1836.448	100.552	-2441.474	-1944.600	-1753.334	83.259
	1200.00	131.043	561.410	466.712	-1823.362	113.638	-2497.054	-1944.662	-1735.944	75.564
	1300.00	131.329	571.911	474.405	-1810.242	126.758	-2553.727	-1944.738	-1718.547	69.052
	1400.00	131.555	581.652	481.722	-1797.098	139.902	-2611.411	-1944.828	-1701.145	63.470
	1500.00	131.736	590.735	488.690	-1783.933	153.067	-2670.035	-1954.368	-1683.129	58.612
	1600.00	131.882	599.242	495.337	-1770.752	166.248	-2729.539	-1955.452	-1665.011	54.357
	1700.00	132.001	607.241	501.686	-1757.557	179.443	-2789.867	-1956.552	-1646.825	50.601
	1800.00	132.099	614.789	507.762	-1744.352	192.648	-2850.972	-1957.669	-1628.574	47.260
	1900.00	132.179	621.933	513.585	-1731.138	205.862	-2912.811	-1958.803	-1610.260	44.269
	2000.00	132.246	628.715	519.173	-1717.917	219.083	-2975.346	-1959.954	-1591.886	41.576

References

Phase	H / S	C _p
GAS	Nb1	Pa2

UF6

URANIUM HEXAFLUORIDE

352.019

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	167.485	227.601	227.601	-2197.002	0.000	-2264.861	-2197.002	-2068.477	362.389
	300.00	168.197	228.639	227.604	-2196.691	0.311	-2265.283	-2196.917	-2067.680	360.015
	337.00	182.439	249.013	228.843	-2190.205	6.797	-2274.122	-2194.978	-2051.851	318.035
			56.988		19.205					
LIQ	337.00	217.568	306.001	228.843	-2171.000	26.002	-2274.122	-2175.773	-2051.851	318.035
	400.00	217.568	343.288	244.016	-2157.293	39.709	-2294.608	-2170.027	-2029.195	264.986

References

Phase	H / S	C _p
SOL	Nb1	Ku1
LIQ	Ku1	e

UF6[g]

URANIUM HEXAFLUORIDE (GAS)

352.019

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	129.640	377.900	377.900	-2147.400	0.000	-2260.071	-2147.400	-2063.686	361.549
	300.00	129.945	378.702	377.902	-2147.160	0.240	-2260.771	-2147.385	-2063.167	359.229
	400.00	140.778	417.786	383.157	-2133.548	13.852	-2300.663	-2146.283	-2035.250	265.776
	500.00	145.954	449.816	393.386	-2119.185	28.215	-2344.093	-2145.091	-2007.632	209.736
	600.00	148.903	476.709	405.093	-2104.430	42.970	-2390.456	-2144.089	-1980.238	172.395
	700.00	150.801	499.815	417.013	-2089.439	57.961	-2439.309	-2143.383	-1952.990	145.734
	800.00	152.138	520.043	428.654	-2074.288	73.112	-2490.323	-2143.036	-1925.820	125.743
	900.00	153.150	538.024	439.825	-2059.022	88.378	-2543.243	-2143.102	-1898.668	110.196
	1000.00	153.959	554.203	450.468	-2043.665	103.735	-2597.868	-2146.038	-1871.321	97.748
	1100.00	154.637	568.909	460.577	-2028.234	119.166	-2654.034	-2150.535	-1843.620	87.546
	1200.00	155.224	582.390	470.174	-2012.741	134.659	-2711.609	-2150.054	-1815.740	79.037
	1300.00	155.748	594.836	479.291	-1997.191	150.209	-2770.478	-2149.574	-1787.900	71.839
	1400.00	156.226	606.396	487.962	-1981.592	165.808	-2830.546	-2149.091	-1760.097	65.670
	1500.00	156.669	617.189	496.221	-1965.947	181.453	-2891.732	-2158.039	-1731.722	60.304
	1600.00	157.087	627.314	504.101	-1950.259	197.141	-2953.962	-2158.511	-1703.286	55.607
	1700.00	157.485	636.849	511.632	-1934.531	212.869	-3017.175	-2158.978	-1674.820	51.461
	1800.00	157.867	645.862	518.841	-1918.763	228.637	-3081.315	-2159.438	-1646.327	47.775
	1900.00	158.237	654.407	525.754	-1902.958	244.442	-3146.332	-2159.892	-1617.808	44.477
	2000.00	158.597	662.533	532.391	-1887.116	260.284	-3212.182	-2160.339	-1589.266	41.507

References

Phase	H / S	C _p
GAS	Nb1	Pa2

241.053		URANIUM TRIHYDRIDE (BETA)								UH3[B]
Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	49.367	63.597	63.597	-127.194	0.000	-146.155	-127.194	-72.718	12.740
	300.00	49.367	63.902	63.598	-127.103	0.091	-146.273	-127.234	-72.379	12.602
	400.00	50.855	78.251	65.544	-122.111	5.083	-153.412	-129.470	-53.760	7.020
	500.00	53.819	89.902	69.283	-116.885	10.309	-161.836	-131.709	-34.573	3.612
	600.00	57.363	100.022	73.580	-111.329	15.865	-171.342	-133.881	-14.940	1.301
	700.00	61.181	109.149	78.019	-105.403	21.791	-181.807	-135.997	5.051	-0.377
	800.00	65.145	117.576	82.443	-99.088	28.106	-193.148	-138.096	25.344	-1.655
	900.00	69.194	125.482	86.790	-92.371	34.823	-205.305	-140.231	45.901	-2.664

References

Phase	H / S	C _p	Remarks
SOL	Ku1	Ra1,e	DEC.

618.742		URANIUM TRIIODIDE								UI3
Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	112.255	222.170	222.170	-460.658	0.000	-526.898	-460.658	-459.962	80.583
	300.00	112.300	222.865	222.173	-460.450	0.208	-527.310	-460.653	-459.958	80.086
	400.00	114.726	255.504	226.606	-449.099	11.559	-551.301	-484.628	-458.911	59.928
	500.00	117.153	281.365	235.059	-437.505	23.153	-578.188	-548.406	-446.369	46.632
	600.00	119.579	302.939	244.623	-425.668	34.990	-607.432	-545.531	-426.232	37.107
	700.00	122.006	321.554	254.313	-413.589	47.069	-638.677	-542.730	-406.572	30.339
	800.00	124.432	338.004	263.766	-401.267	59.391	-671.671	-540.052	-387.305	25.288
	900.00	126.858	352.800	272.850	-388.703	71.955	-706.223	-537.547	-368.365	21.379

References

Phase	H / S	C _p
SOL	Nb1	Pa2

UI4

URANIUM TETRAIODIDE

745.647

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	126.356	263.592	263.592	-512.122	0.000	-590.712	-512.122	-506.462	88.730
	300.00	126.648	264.375	263.594	-511.888	0.234	-591.200	-512.141	-506.427	88.177
	400.00	137.244	302.458	268.715	-498.625	13.497	-619.608	-545.023	-503.276	65.721
	500.00	142.683	333.722	278.686	-484.604	27.518	-651.465	-630.472	-484.634	50.629
	600.00	146.092	360.058	290.111	-470.154	41.968	-686.189	-626.859	-455.806	39.681
	700.00	148.543	382.771	301.763	-455.417	56.705	-723.356	-623.281	-427.581	31.906
	779.00	150.106	398.739	310.801	-443.618	68.504	-754.236	-620.558	-405.644	27.200
LIQ			49.413		38.493					
	779.00	165.686	448.152	310.801	-405.125	106.997	-754.236	-582.065	-405.644	27.200
	800.00	165.686	452.560	314.465	-401.646	110.476	-763.694	-581.040	-400.902	26.176
	900.00	165.686	472.075	330.914	-385.077	127.045	-809.945	-576.421	-378.667	21.977
	1000.00	165.686	489.531	345.918	-368.509	143.613	-858.040	-574.680	-356.757	18.635

References

Phase	H / S	C _p
SOL	Nb1	Ra1
LIQ	Pa2	Ra1

UI4[g]

URANIUM TETRAIODIDE (GAS)

745.647

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	124.599	494.001	494.001	-301.700	0.000	-448.987	-301.700	-364.737	63.900
	300.00	124.716	494.773	494.004	-301.469	0.231	-449.901	-301.722	-365.128	63.574
	400.00	128.825	531.298	498.956	-288.763	12.937	-501.282	-335.162	-384.950	50.269
	500.00	130.750	560.274	508.422	-275.774	25.926	-555.911	-421.642	-389.081	40.647
	600.00	131.815	584.215	519.117	-262.641	39.059	-613.170	-419.346	-382.787	33.325
	700.00	132.473	604.588	529.908	-249.424	52.276	-672.636	-417.289	-376.861	28.122
	800.00	132.915	622.308	540.375	-236.154	65.546	-734.000	-415.548	-371.208	24.237
	900.00	133.231	637.982	550.366	-222.846	78.854	-797.029	-414.189	-365.752	21.228
	1000.00	133.470	652.032	559.842	-209.510	92.190	-861.542	-415.682	-360.259	18.818
	1100.00	133.657	664.763	568.811	-196.153	105.547	-927.392	-418.722	-354.558	16.837
	1200.00	133.809	676.399	577.299	-182.780	118.920	-994.458	-416.780	-348.811	15.183
	1300.00	133.937	687.115	585.339	-169.392	132.308	-1062.641	-414.836	-343.225	13.791
	1400.00	134.047	697.044	592.968	-155.993	145.707	-1131.855	-412.893	-337.790	12.603
	1500.00	134.144	706.296	600.218	-142.583	159.117	-1202.027	-420.385	-331.887	11.557
	1600.00	134.231	714.956	607.122	-129.165	172.535	-1273.095	-419.409	-326.019	10.643
	1700.00	134.310	723.096	613.707	-115.738	185.962	-1345.001	-418.437	-320.211	9.839
	1800.00	134.383	730.775	619.999	-102.303	199.397	-1417.699	-417.469	-314.461	9.125
	1900.00	134.451	738.043	626.023	-88.861	212.839	-1491.143	-416.506	-308.765	8.489
	2000.00	134.516	744.941	631.797	-75.413	226.287	-1565.295	-415.548	-303.119	7.917

References

Phase	H / S	C _p
GAS	Nb1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S —(G-H298)/T— [————— kJ / mol —————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [—]	
SOL	298.15	47.573	62.425	62.425	-290.788	0.000	-309.400	-290.788	-265.842	46.574
	300.00	47.649	62.720	62.426	-290.700	0.088	-309.516	-290.778	-265.687	46.260
	400.00	50.749	76.893	64.338	-285.766	5.022	-316.523	-290.171	-257.412	33.615
	500.00	52.788	88.447	68.039	-280.584	10.204	-324.808	-289.541	-249.296	26.044
	600.00	54.405	98.219	72.276	-275.222	15.566	-334.153	-289.005	-241.299	21.007
	700.00	55.821	106.714	76.602	-269.710	21.078	-344.409	-288.648	-233.379	17.415
	800.00	57.131	114.254	80.846	-264.061	26.727	-355.464	-288.540	-225.494	14.723
	900.00	58.378	121.055	84.942	-258.286	32.502	-367.235	-288.742	-217.605	12.629
	1000.00	59.586	127.269	88.868	-252.387	38.401	-379.656	-291.716	-209.510	10.944
	1100.00	60.769	133.004	92.623	-246.369	44.419	-392.673	-296.155	-201.062	9.548
	1200.00	61.935	138.341	96.213	-240.234	50.554	-406.244	-295.522	-192.445	8.377
	1300.00	63.090	143.345	99.648	-233.982	56.806	-420.330	-294.796	-183.884	7.389
	1400.00	64.236	148.062	102.939	-227.616	63.172	-434.903	-293.975	-175.382	6.544
	1500.00	65.375	152.533	106.098	-221.136	69.652	-449.935	-302.490	-166.337	5.792
	1600.00	66.510	156.788	109.134	-214.541	76.247	-465.402	-302.436	-157.261	5.134
	1700.00	67.640	160.854	112.058	-207.834	82.954	-481.286	-302.282	-148.192	4.553
	1800.00	68.768	164.752	114.878	-201.013	89.775	-497.568	-302.027	-139.135	4.038
	1900.00	69.894	168.501	117.602	-194.080	96.708	-514.231	-301.669	-130.094	3.577
	2000.00	71.017	172.114	120.238	-187.035	103.753	-531.263	-301.209	-121.075	3.162
	2100.00	72.139	175.606	122.791	-179.877	110.911	-548.650	-300.644	-112.082	2.788
	2200.00	73.259	178.988	125.269	-172.607	118.181	-566.381	-299.975	-103.118	2.448
	2300.00	74.378	182.269	127.677	-165.225	125.563	-584.444	-299.200	-94.187	2.139
	2400.00	75.495	185.458	130.018	-157.731	133.057	-602.832	-298.320	-85.292	1.856
	2500.00	76.612	188.563	132.298	-150.126	140.662	-621.533	-297.333	-76.436	1.597
	2600.00	77.727	191.589	134.521	-142.409	148.379	-640.541	-296.240	-67.621	1.359
	2700.00	78.841	194.544	136.689	-134.581	156.207	-659.849	-295.040	-58.851	1.139
	2800.00	79.954	197.431	138.807	-126.641	164.147	-679.448	-293.734	-50.127	0.935
	2900.00	81.066	200.256	140.878	-118.590	172.198	-699.333	-292.319	-41.451	0.747
	3000.00	82.176	203.023	142.903	-110.428	180.360	-719.497	-290.798	-32.826	0.572

References

Phase	H / S	C _p
SOL	Pa3	Pa3

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	63.607	77.032	77.032	-1084.899	0.000	-1107.866	-1084.899	-1031.707	180.751
	300.00	63.832	77.426	77.033	-1084.781	0.118	-1108.009	-1084.887	-1031.377	179.579
	400.00	72.062	97.067	79.655	-1077.934	6.965	-1116.761	-1083.879	-1013.677	132.373
	500.00	76.354	113.651	84.841	-1070.494	14.405	-1127.320	-1082.580	-996.275	104.080
	600.00	79.095	127.829	90.854	-1062.714	22.185	-1139.411	-1081.293	-979.136	85.241
	700.00	81.105	140.179	97.037	-1054.699	30.200	-1152.825	-1080.168	-962.202	71.800
	800.00	82.724	151.118	103.126	-1046.505	38.394	-1167.400	-1079.297	-945.413	61.729
	900.00	84.117	160.944	109.014	-1038.162	46.737	-1183.011	-1078.748	-928.714	53.901
	1000.00	85.368	169.872	114.660	-1029.687	55.212	-1199.559	-1080.987	-911.892	47.632
	1100.00	86.528	178.064	120.057	-1021.091	63.808	-1216.961	-1084.709	-894.790	42.490
	1200.00	87.625	185.640	125.210	-1012.383	72.516	-1235.151	-1083.378	-877.583	38.200
	1300.00	88.678	192.696	130.133	-1003.568	81.331	-1254.072	-1081.974	-860.490	34.575
	1400.00	89.699	199.305	134.840	-994.649	90.250	-1273.676	-1080.497	-843.508	31.472
	1500.00	90.696	205.527	139.347	-985.629	99.270	-1293.920	-1088.380	-826.028	28.765
	1600.00	91.675	211.412	143.669	-976.510	108.389	-1314.770	-1087.719	-808.559	26.397
	1700.00	92.640	216.999	147.820	-967.294	117.605	-1336.193	-1086.985	-791.133	24.309
	1800.00	93.594	222.321	151.812	-957.983	126.916	-1358.161	-1086.180	-773.753	22.454
	1900.00	94.540	227.407	155.658	-948.576	136.323	-1380.649	-1085.304	-756.419	20.795
	2000.00	95.478	232.280	159.368	-939.075	145.824	-1403.635	-1084.356	-739.134	19.304
	2100.00	106.270	237.335	162.960	-928.712	156.187	-1427.116	-1082.570	-721.915	17.957
	2200.00	112.185	242.412	166.456	-917.795	167.104	-1451.103	-1080.252	-704.793	16.734
	2300.00	118.738	247.542	169.870	-906.254	178.645	-1475.600	-1077.332	-687.789	15.620
	2400.00	125.825	252.743	173.214	-894.030	190.869	-1500.614	-1073.751	-670.927	14.602
	2500.00	133.361	258.031	176.501	-881.074	203.825	-1526.151	-1069.461	-654.228	13.669
	2600.00	141.279	263.415	179.740	-867.345	217.554	-1552.223	-1064.418	-637.716	12.812
	2700.00	149.524	268.900	182.940	-852.808	232.091	-1578.838	-1058.589	-621.412	12.022
	2800.00	158.049	274.491	186.110	-837.431	247.468	-1606.006	-1051.941	-605.340	11.293
	2900.00	166.817	280.190	189.255	-821.190	263.709	-1633.740	-1044.448	-589.519	10.618
	3000.00	175.795	285.996	192.383	-804.061	280.838	-1662.048	-1036.087	-573.972	9.994
	3100.00	184.958	291.909	195.498	-786.024	298.875	-1690.942	-1026.837	-558.718	9.414
	3115.00	186.347	292.805	195.964	-783.240	301.659	-1695.328	-1025.371	-556.457	9.331
LIQ			24.413		76.048					
	3115.00	131.545	317.219	195.964	-707.192	377.707	-1695.328	-949.323	-556.457	9.331
	3200.00	131.545	320.760	199.232	-696.010	388.889	-1722.442	-945.627	-545.787	8.909
	3300.00	131.545	324.808	202.977	-682.856	402.043	-1754.722	-941.294	-533.359	8.442
	3400.00	131.545	328.735	206.618	-669.701	415.198	-1787.400	-936.978	-521.062	8.005
	3500.00	131.545	332.548	210.162	-656.547	428.352	-1820.465	-932.678	-508.891	7.595
	3600.00	131.545	336.254	213.613	-643.392	441.507	-1853.906	-928.394	-496.844	7.209

References

Phase	H / S	C _p
SOL	Nb1	Pa1
LIQ	Pa1	Pa1

286.027

URANIUM TRIOXIDE (ORTHORHOMBIC)

UO3

Phase	T [K]	C _p [————— J / (K mol) —————]	S —(G-H298)/T—	H [————— kJ / mol —————]	H-H298	G	ΔH _f	ΔG _f	log K _f [-]	
SOL-C	298.15	81.667	96.107	96.107	-1222.983	0.000	-1251.637	-1222.983	-1144.896	200.581
	300.00	81.868	96.612	96.108	-1222.832	0.151	-1251.815	-1222.964	-1144.411	199.260
	400.00	89.191	121.302	99.425	-1214.232	8.751	-1262.753	-1221.690	-1118.408	146.049
	500.00	93.004	141.651	105.897	-1205.106	17.877	-1275.931	-1220.234	-1092.755	114.159
	600.00	95.434	158.836	113.325	-1195.676	27.307	-1290.978	-1218.878	-1067.390	92.925
	700.00	97.211	173.687	120.911	-1186.040	36.943	-1307.621	-1217.758	-1042.235	77.773
	800.00	98.641	186.764	128.342	-1176.245	46.738	-1325.657	-1216.954	-1017.219	66.418
	900.00	99.869	198.455	135.494	-1166.319	56.664	-1344.928	-1216.525	-992.282	57.591

References

Phase	H / S	C _p
SOL-C	Fi1,Nb1	Pa1

842.082

TRIURANIUM OCTAOXIDE (ORTHORHOMBIC)

U3O8

Phase	T [K]	C _p [————— J / (K mol) —————]	S —(G-H298)/T—	H [————— kJ / mol —————]	H-H298	G	ΔH _f	ΔG _f	log K _f [-]	
SOL-A	298.15	237.236	282.592	282.592	-3574.810	0.000	-3659.065	-3574.810	-3369.423	590.309
	300.00	237.996	284.061	282.596	-3574.370	0.440	-3659.589	-3574.741	-3368.149	586.447
	400.00	265.975	356.861	292.332	-3548.998	25.812	-3691.743	-3569.859	-3299.968	430.932
	500.00	280.910	417.955	311.519	-3521.592	53.218	-3730.569	-3563.934	-3233.173	337.767
	600.00	290.710	470.088	333.710	-3492.983	81.827	-3775.036	-3557.967	-3167.585	275.763
	700.00	298.086	515.477	356.504	-3463.529	111.281	-3824.363	-3552.434	-3102.967	231.546
	800.00	304.170	555.689	378.936	-3433.408	141.402	-3877.959	-3547.618	-3039.096	198.433
	900.00	309.503	591.828	400.617	-3402.720	172.090	-3935.365	-3543.718	-2975.776	172.710

References

Phase	H / S	C _p
SOL-A	Nb1	Ku1,e

U4O9

TETRAURANIUM NONAOXIDE

1096.110

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [————— kJ / mol —————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL-1	298.15	294.554	334.218	334.218	-4510.770	0.000	-4610.417	-4510.770	-4275.199	748.997
	300.00	296.060	336.045	334.224	-4510.224	0.546	-4611.037	-4510.673	-4273.737	744.124
	348.00	411.706	385.412	337.782	-4494.195	16.575	-4628.318	-4506.428	-4236.085	635.834
SOL-2			0.000		0.000					
	348.00	411.706	385.412	337.782	-4494.195	16.575	-4628.318	-4506.428	-4236.085	635.834
	400.00	312.294	429.453	347.034	-4477.802	32.968	-4649.583	-4503.095	-4195.987	547.940
	500.00	324.678	500.913	370.883	-4445.755	65.015	-4696.212	-4497.141	-4119.902	430.403
	600.00	332.986	560.858	397.681	-4412.864	97.906	-4749.379	-4491.806	-4044.967	352.146
	700.00	340.875	612.780	424.782	-4379.171	131.599	-4808.117	-4487.296	-3970.863	296.309
	800.00	348.872	658.818	451.212	-4344.685	166.085	-4871.739	-4483.768	-3897.340	254.470
	900.00	357.019	700.378	476.624	-4309.392	201.378	-4939.732	-4481.356	-3824.194	221.950
	1000.00	365.304	738.421	500.928	-4273.277	237.493	-5011.698	-4489.829	-3750.593	195.911
	1100.00	373.747	773.633	524.138	-4236.326	274.444	-5087.322	-4503.902	-3675.937	174.556
	1200.00	382.414	806.523	546.314	-4198.520	312.250	-5166.347	-4497.380	-3600.950	156.745
	1300.00	391.406	837.485	567.533	-4159.832	350.938	-5248.562	-4490.129	-3526.536	141.698
	1400.00	400.853	866.834	587.872	-4120.223	390.547	-5333.791	-4482.094	-3452.710	128.822
SOL-3			7.979		11.171					
	1400.00	413.379	874.813	587.872	-4109.052	401.718	-5333.791	-4470.923	-3452.710	128.822
	1500.00	413.379	903.333	607.963	-4067.714	443.056	-5422.714	-4499.016	-3377.892	117.629
	1600.00	413.379	930.012	627.266	-4026.377	484.393	-5514.396	-4493.343	-3303.337	107.843

References

Phase	H / S	C _p	Remarks
SOL-1	Fi1,Pa1	Pa1	2nd order TPT= 348.
SOL-2	Pa1	Pa1	
SOL-3	Pa1	Pa1	

UOBr2

URANIUM DIBROMIDE OXIDE

413.836

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [————— kJ / mol —————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	97.988	157.569	157.569	-973.617	0.000	-1020.596	-973.617	-929.638	162.869
	300.00	98.219	158.176	157.571	-973.436	0.181	-1020.888	-973.654	-929.365	161.817
	400.00	106.818	187.759	161.546	-963.132	10.485	-1038.236	-1002.186	-908.597	118.651
	500.00	111.533	212.143	169.300	-952.196	21.421	-1058.267	-999.554	-885.501	92.508
	600.00	114.719	232.774	178.204	-940.875	32.742	-1080.540	-996.866	-862.943	75.126
	700.00	117.183	250.650	187.305	-929.276	44.341	-1104.730	-994.263	-840.830	62.744
	800.00	119.263	266.436	196.229	-917.451	56.166	-1130.600	-991.840	-819.079	53.480
	900.00	121.119	280.592	204.829	-905.430	68.187	-1157.964	-989.669	-797.617	46.293

References

Phase	H / S	C _p
SOL	Nb1	Nb1,e

493.740

URANIUM TRIBROMIDE OXIDE

UOBr3

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	121.121	205.016	205.016	-953.952	0.000	-1015.078	-953.952	-901.429	157.927
	300.00	121.350	205.766	205.018	-953.728	0.224	-1015.457	-954.016	-901.103	156.896
	400.00	130.112	242.014	209.901	-941.107	12.845	-1037.912	-997.472	-874.365	114.180
	500.00	135.269	271.641	219.377	-927.820	26.132	-1063.641	-994.336	-843.948	88.167
	600.00	139.006	296.647	230.226	-914.099	39.853	-1092.087	-991.106	-814.173	70.880
	700.00	142.074	318.312	241.296	-900.041	53.911	-1122.859	-987.912	-784.938	58.573
	800.00	144.785	337.463	252.143	-885.696	68.256	-1155.666	-984.843	-756.153	49.372
	900.00	147.288	354.662	262.594	-871.091	82.861	-1190.287	-981.966	-727.742	42.237
	1000.00	149.662	370.304	272.595	-856.243	97.709	-1226.547	-981.749	-699.474	36.537
	1100.00	151.951	384.677	282.140	-841.161	112.791	-1264.306	-982.890	-671.178	31.872

References

Phase	H / S	C _p
SOL	Nb1	e

429.836

URANIUM DIBROMIDE DIOXIDE

UO2Br2

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	97.987	169.452	169.452	-1137.630	0.000	-1188.152	-1137.630	-1066.612	186.866
	300.00	98.167	170.059	169.454	-1137.449	0.181	-1188.466	-1137.694	-1066.171	185.637
	400.00	105.127	199.360	173.402	-1127.247	10.383	-1206.991	-1167.814	-1036.090	135.300
	500.00	109.290	223.296	181.060	-1116.512	21.118	-1228.160	-1166.913	-1003.263	104.810
	600.00	112.352	243.503	189.827	-1105.424	32.206	-1251.526	-1166.037	-970.616	84.500
	700.00	114.895	261.018	198.774	-1094.059	43.571	-1276.772	-1165.296	-938.107	70.002
	800.00	117.160	276.510	207.541	-1082.454	55.176	-1303.663	-1164.761	-905.691	59.136
	900.00	119.265	290.433	215.990	-1070.632	66.998	-1332.021	-1164.491	-873.327	50.687
	1000.00	121.269	303.103	224.078	-1058.605	79.025	-1361.708	-1166.944	-840.812	43.919

References

Phase	H / S	C _p
SOL	Nb1	e

UOCl

URANIUM CHLORIDE OXIDE

289.481

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	72.991	102.926	102.926	-947.258	0.000	-977.946	-947.258	-899.108	157.520
	300.00	73.028	103.378	102.928	-947.123	0.135	-978.136	-947.233	-898.809	156.497
	400.00	75.713	124.728	105.821	-939.695	7.563	-989.586	-945.892	-882.871	115.291
	500.00	79.086	141.978	111.379	-931.958	15.300	-1002.947	-944.553	-867.270	90.603
	600.00	82.730	156.716	117.735	-923.869	23.389	-1017.899	-943.195	-851.941	74.168
	700.00	86.502	169.751	124.252	-915.408	31.850	-1034.234	-941.834	-836.839	62.446
	800.00	90.343	181.552	130.688	-906.566	40.692	-1051.808	-940.499	-821.931	53.667
	900.00	94.223	192.417	136.951	-897.338	49.920	-1070.514	-939.226	-807.188	46.848

References

Phase	H / S	C _p
SOL	K1/e	e

UOCl2

URANIUM DICHLORIDE OXIDE

324.934

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	95.061	138.323	138.323	-1066.920	0.000	-1108.161	-1066.920	-996.062	174.506
	300.00	95.239	138.912	138.325	-1066.744	0.176	-1108.417	-1066.885	-995.622	173.353
	400.00	102.209	167.364	142.157	-1056.837	10.083	-1123.783	-1064.799	-972.174	126.953
	500.00	106.579	190.669	149.599	-1046.385	20.535	-1141.720	-1062.530	-949.278	99.170
	600.00	109.926	210.406	158.130	-1035.554	31.366	-1161.798	-1060.248	-926.843	80.689
	700.00	112.789	227.571	166.851	-1024.416	42.504	-1183.716	-1058.048	-904.784	67.516
	800.00	115.395	242.804	175.410	-1013.005	53.915	-1207.248	-1055.997	-883.032	57.656

References

Phase	H / S	C _p
SOL	Nb1	K3,e

360.386

URANIUM TRICHLORIDE OXIDE

UOCl3

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	116.935	171.498	171.498	–1163.001	0.000	–1214.133	–1163.001	–1068.773	187.245
	300.00	117.012	172.222	171.500	–1162.785	0.216	–1214.451	–1162.957	–1068.189	185.988
	400.00	121.105	206.446	176.139	–1150.878	12.123	–1233.457	–1160.605	–1036.954	135.412
	500.00	125.143	233.905	185.033	–1138.565	24.436	–1255.518	–1158.260	–1006.313	105.129
	600.00	129.161	257.076	195.158	–1125.850	37.151	–1280.096	–1155.912	–976.144	84.981
	700.00	133.167	277.287	205.477	–1112.734	50.267	–1306.835	–1153.573	–946.367	70.619
	800.00	137.169	295.331	215.600	–1099.217	63.784	–1335.481	–1151.267	–916.924	59.869
	900.00	141.167	311.718	225.383	–1085.300	77.701	–1365.846	–1149.031	–887.767	51.525

References

Phase	H / S	C _p
SOL	Nb1	K3,e

340.933

URANIUM DICHLORIDE DIOXIDE

UO2Cl2

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	107.860	150.540	150.540	–1243.903	0.000	–1288.787	–1243.903	–1146.105	200.793
	300.00	108.142	151.208	150.542	–1243.703	0.200	–1289.066	–1243.872	–1145.499	199.449
	400.00	118.282	183.902	154.931	–1232.315	11.588	–1305.875	–1241.790	–1113.005	145.344
	500.00	123.353	210.895	163.506	–1220.209	23.694	–1325.656	–1239.396	–1081.084	112.940
	600.00	126.428	233.676	173.352	–1207.709	36.194	–1347.914	–1237.025	–1049.646	91.380
	700.00	128.562	253.334	183.406	–1194.954	48.949	–1372.287	–1234.836	–1018.592	76.008
	800.00	130.194	270.612	193.249	–1182.013	61.890	–1398.502	–1232.922	–987.835	64.499

References

Phase	H / S	C _p
SOL	Nb1	K3,e

UO2F2

URANIUM DIFLUORIDE DIOXIDE

308.025

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	103.221	135.562	135.562	-1648.078	0.000	-1688.496	-1648.078	-1551.873	271.882
	300.00	103.513	136.201	135.564	-1647.887	0.191	-1688.747	-1648.050	-1551.276	270.101
	400.00	114.056	167.623	139.776	-1636.939	11.139	-1703.988	-1646.156	-1519.287	198.399
	500.00	119.399	193.704	148.031	-1625.242	22.836	-1722.093	-1643.962	-1487.822	155.432
	600.00	122.695	215.784	157.530	-1613.126	34.952	-1742.596	-1641.813	-1456.799	126.826
	700.00	125.024	234.881	167.247	-1600.734	47.344	-1765.151	-1639.861	-1426.121	106.418
	800.00	126.839	251.699	176.773	-1588.138	59.940	-1789.497	-1638.193	-1395.704	91.130
	900.00	128.354	266.728	185.948	-1575.376	72.702	-1815.431	-1636.874	-1365.476	79.250
	1000.00	129.683	280.321	194.717	-1562.473	85.605	-1842.795	-1638.365	-1335.209	69.744
	1100.00	130.891	292.739	203.071	-1549.444	98.634	-1871.457	-1641.360	-1304.737	61.957
	1200.00	132.015	304.177	211.026	-1536.298	111.780	-1901.310	-1639.319	-1274.224	55.466
	1300.00	133.082	314.786	218.605	-1523.043	125.035	-1932.264	-1637.222	-1243.885	49.980
	1400.00	134.106	324.686	225.832	-1509.683	138.395	-1964.243	-1635.067	-1213.708	45.284
	1500.00	135.099	333.972	232.735	-1496.222	151.856	-1997.181	-1642.286	-1183.082	41.199

References

Phase	H / S	C _p
SOL	Nb1	e

UO3*H2O

URANIUM TRIOXIDE MONOHYDRATE

304.042

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	117.347	125.938	125.938	-1533.854	0.000	-1571.403	-1533.854	-1395.117	244.419
	300.00	117.780	126.666	125.941	-1533.637	0.217	-1571.636	-1533.850	-1394.256	242.762
	400.00	135.248	163.167	130.799	-1520.907	12.947	-1586.174	-1532.836	-1347.840	176.010
	500.00	146.817	194.653	140.495	-1506.775	27.079	-1604.102	-1530.828	-1301.808	135.999
	600.00	156.063	222.261	151.869	-1491.619	42.235	-1624.975	-1528.253	-1256.239	109.365
	700.00	164.213	246.940	163.718	-1475.598	58.256	-1648.457	-1525.315	-1211.131	90.376
	800.00	171.779	269.367	175.543	-1458.795	75.059	-1674.288	-1522.124	-1166.463	76.162

References

Phase	H / S	C _p
SOL	Nb1	e

322.058		URANIUM TRIOXIDE DIHYDRATE							UO3*2H2O	
Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	154.405	167.000	167.000	-1826.701	0.000	-1876.492	-1826.701	-1630.662	285.685
	300.00	154.837	167.957	167.003	-1826.415	0.286	-1876.802	-1826.709	-1629.445	283.712
	400.00	172.305	215.119	173.315	-1809.979	16.722	-1896.027	-1826.381	-1563.705	204.199
	500.00	183.874	254.874	185.756	-1792.142	34.559	-1919.579	-1825.119	-1498.168	156.513
	600.00	193.121	289.238	200.203	-1773.280	53.421	-1946.823	-1823.348	-1432.938	124.748
	700.00	201.271	319.630	215.134	-1753.554	73.147	-1977.295	-1821.268	-1368.030	102.084
	800.00	208.837	347.005	229.935	-1733.045	93.656	-2010.649	-1818.992	-1303.435	85.106

References

Phase	H / S	C _p
SOL	Nb1	e

394.038		URANIUM DINITRATE DIOXIDE							UO2(NO3)2	
Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	187.662	242.672	242.672	-1349.340	0.000	-1421.693	-1349.340	-1104.912	193.576
	300.00	187.964	243.834	242.676	-1348.993	0.347	-1422.143	-1349.315	-1103.395	192.118
	400.00	198.803	299.602	250.206	-1329.582	19.758	-1449.422	-1347.574	-1021.668	133.416
	500.00	204.179	344.599	264.732	-1309.406	39.934	-1481.706	-1345.656	-940.416	98.245
	600.00	207.406	382.132	281.258	-1288.815	60.525	-1518.095	-1344.022	-859.529	74.829
	700.00	209.617	414.279	298.019	-1267.958	81.382	-1557.954	-1342.860	-778.879	58.121

References

Phase	H / S	C _p
SOL	Nb1	e

UO2SO4

URANIUM SULFATE DIOXIDE

366.091

Phase	T [K]	C _p [————— J / (K mol)	S [————— J / (K mol)	-(G-H298)/T [—————]	H [————— kJ / mol	H-H298 [————— kJ / mol	G [————— kJ / mol	ΔH _f [————— kJ / mol	ΔG _f [————— kJ / mol	log K _f [-]
SOL-B	298.15	145.245	154.808	154.808	-1845.102	0.000	-1891.258	-1845.102	-1683.212	294.892
	300.00	145.488	155.707	154.811	-1844.833	0.269	-1891.545	-1845.089	-1682.208	292.898
	400.00	154.293	198.935	160.645	-1829.786	15.316	-1909.360	-1846.405	-1627.953	212.589
	500.00	158.728	233.888	171.912	-1814.114	30.988	-1931.058	-1846.894	-1573.308	164.362
	600.00	161.443	263.084	184.741	-1798.096	47.006	-1955.947	-1847.265	-1518.553	132.202
	700.00	163.346	288.121	197.764	-1781.852	63.250	-1983.537	-1847.729	-1463.735	109.225

References

Phase	H / S	C _p
SOL-B	Nb1	e

US

URANIUM SULFIDE

270.095

Phase	T [K]	C _p [————— J / (K mol)	S [————— J / (K mol)	-(G-H298)/T [—————]	H [————— kJ / mol	H-H298 [————— kJ / mol	G [————— kJ / mol	ΔH _f [————— kJ / mol	ΔG _f [————— kJ / mol	log K _f [-]
SOL	298.15	50.539	77.990	77.990	-317.984	0.000	-341.237	-317.984	-316.685	55.482
	300.00	50.603	78.303	77.991	-317.890	0.094	-341.381	-317.984	-316.677	55.138
	400.00	53.092	93.239	80.010	-312.693	5.291	-349.988	-320.236	-316.150	41.285
	500.00	54.593	105.258	83.897	-307.304	10.680	-359.933	-321.831	-314.969	32.905
	600.00	55.705	115.313	88.318	-301.787	16.197	-370.975	-323.224	-313.460	27.289
	700.00	56.634	123.972	92.807	-296.169	21.815	-382.949	-324.550	-311.730	23.262
	800.00	57.465	131.589	97.188	-290.463	27.521	-395.734	-326.190	-309.792	20.227
	900.00	58.239	138.403	101.396	-284.678	33.306	-409.240	-381.000	-306.471	17.787
	1000.00	58.977	144.577	105.410	-278.817	39.167	-423.394	-384.226	-297.986	15.565
	1100.00	59.693	150.232	109.231	-272.883	45.101	-438.138	-388.943	-289.122	13.729
	1200.00	60.393	155.456	112.868	-266.879	51.105	-453.426	-388.616	-280.061	12.191
	1300.00	61.081	160.317	116.333	-260.805	57.179	-469.217	-388.224	-271.030	10.890
	1400.00	61.762	164.869	119.639	-254.663	63.321	-485.479	-387.770	-262.032	9.777
	1500.00	62.437	169.153	122.799	-248.453	69.531	-502.182	-396.685	-252.462	8.792
	1600.00	63.107	173.204	125.824	-242.175	75.809	-519.302	-397.067	-242.834	7.928
	1700.00	63.774	177.050	128.725	-235.831	82.153	-536.816	-397.386	-233.185	7.165
	1800.00	64.438	180.714	131.512	-229.421	88.563	-554.706	-397.642	-223.518	6.486
	1900.00	65.100	184.216	134.195	-222.944	95.040	-572.954	-397.837	-213.839	5.879
	2000.00	65.760	187.572	136.780	-216.401	101.583	-591.544	-397.969	-204.151	5.332

References

Phase	H / S	C _p	Remarks
SOL	Nb1	Mi1	Mi1 MPT= 2735.

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
GAS	298.15	33.787	263.952	263.953	305.001	0.000	226.304	305.001	250.856	–43.949
	300.00	33.827	264.162	263.953	305.064	0.063	225.815	304.970	250.520	–43.619
	400.00	35.269	274.120	265.301	308.528	3.527	198.881	300.986	232.719	–30.390
	500.00	35.947	282.071	267.887	312.093	7.092	171.058	297.566	216.021	–22.568
	600.00	36.326	288.661	270.816	315.708	10.707	142.511	294.271	200.026	–17.414
	700.00	36.563	294.280	273.776	319.354	14.353	113.357	290.972	184.577	–13.773
	800.00	36.724	299.173	276.652	323.018	18.017	83.680	287.292	169.622	–11.075
	900.00	36.842	303.506	279.400	326.697	21.696	53.541	230.375	156.310	–9.072
	1000.00	36.932	307.393	282.008	330.386	25.385	22.993	224.976	148.401	–7.752
	1100.00	37.004	310.916	284.478	334.083	29.082	–7.925	218.022	141.092	–6.700
	1200.00	37.064	314.139	286.818	337.786	32.785	–39.180	216.049	134.185	–5.841
	1300.00	37.116	317.107	289.035	341.495	36.494	–70.744	214.076	127.443	–5.121
	1400.00	37.161	319.860	291.139	345.209	40.208	–102.594	212.102	120.853	–4.509
	1500.00	37.202	322.425	293.141	348.927	43.926	–134.710	200.695	115.010	–4.005
	1600.00	37.240	324.827	295.047	352.649	47.648	–167.074	197.758	109.394	–3.571
	1700.00	37.274	327.086	296.866	356.375	51.374	–199.671	194.821	103.961	–3.194
	1800.00	37.307	329.217	298.604	360.104	55.103	–232.487	191.882	98.701	–2.864
	1900.00	37.338	331.235	300.269	363.836	58.835	–265.510	188.943	93.604	–2.573
	2000.00	37.367	333.151	301.866	367.572	62.571	–298.730	186.003	88.663	–2.316

References

Phase	H / S	C _p
GAS	Nb1/Mi1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-B	298.15	74.667	110.458	110.458	-527.184	0.000	-560.117	-527.184	-526.007	92.154
	300.00	74.684	110.920	110.459	-527.046	0.138	-560.322	-527.181	-526.000	91.585
	400.00	75.647	132.537	113.400	-519.529	7.655	-572.544	-531.696	-525.428	68.614
	500.00	76.609	149.520	118.985	-511.917	15.267	-586.677	-534.969	-523.532	54.693
	600.00	77.571	163.573	125.278	-504.207	22.977	-602.351	-537.746	-520.970	45.354
	700.00	78.534	175.603	131.629	-496.402	30.782	-619.324	-540.195	-517.981	38.652
	800.00	79.496	186.152	137.798	-488.501	38.683	-637.422	-542.998	-514.623	33.601
	900.00	80.458	195.571	143.703	-480.503	46.681	-656.517	-551.803	-508.580	29.517
	1000.00	81.421	204.098	149.323	-472.409	54.775	-676.507	-564.632	-492.483	25.725
	1100.00	82.383	211.903	154.662	-464.219	62.965	-697.313	-568.934	-476.048	22.606
	1200.00	83.345	219.113	159.737	-455.932	71.252	-718.868	-568.173	-459.455	20.000
	1300.00	84.308	225.822	164.565	-447.550	79.634	-741.118	-567.327	-442.929	17.797
	1400.00	85.270	232.105	169.167	-439.071	88.113	-764.018	-566.394	-426.471	15.912
	1500.00	86.232	238.021	173.562	-430.496	96.688	-787.527	-564.808	-409.477	14.259
	1600.00	87.195	243.617	177.767	-421.825	105.359	-811.612	-564.664	-392.459	12.812
	1700.00	88.157	248.932	181.798	-413.057	114.127	-836.241	-564.432	-375.453	11.536
	1800.00	89.119	253.998	185.670	-404.193	122.991	-861.390	-564.113	-358.463	10.402
	1900.00	90.082	258.842	189.394	-395.233	131.951	-887.033	-563.705	-341.493	9.388
	2000.00	91.044	263.487	192.984	-386.177	141.007	-913.151	-563.208	-324.547	8.476

References

Phase	H / S	C _p	Remarks
SOL-B	Nb1	Mi1	Mi1 MPT= 2120.

572.256

DIURANIUM TRISULFIDE

U2S3

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	141.400	199.200	199.200	–854.000	0.000	–913.392	–854.000	–854.730	149.745
	300.00	141.482	200.075	199.203	–853.738	0.262	–913.761	–853.967	–854.735	148.823
	400.00	144.923	241.286	204.798	–839.405	14.595	–935.919	–859.114	–854.966	111.647
	500.00	147.381	273.899	215.469	–824.785	29.215	–961.735	–862.365	–853.626	89.178
	600.00	149.452	300.957	227.526	–809.941	44.059	–990.515	–864.918	–851.619	74.140
	700.00	151.341	324.139	239.711	–794.901	59.099	–1021.798	–867.074	–849.235	63.371
	800.00	153.132	344.465	251.560	–779.676	74.324	–1055.248	–869.901	–846.506	55.271
	900.00	154.866	362.602	262.909	–764.276	89.724	–1090.618	–1031.898	–839.912	48.747
	1000.00	156.565	379.007	273.711	–748.704	105.296	–1127.711	–1036.337	–818.280	42.743
	1100.00	158.241	394.008	283.975	–732.964	121.036	–1166.372	–1043.739	–796.092	37.803
	1200.00	159.902	407.848	293.728	–717.056	136.944	–1206.474	–1041.034	–773.696	33.678
	1300.00	161.552	420.712	303.007	–700.984	153.016	–1247.910	–1038.180	–751.533	30.197
	1400.00	163.193	432.745	311.849	–684.746	169.254	–1290.589	–1035.177	–729.595	27.222
	1500.00	164.829	444.060	320.290	–668.345	185.655	–1334.435	–1050.890	–706.664	24.608
	1600.00	166.460	454.749	328.362	–651.781	202.219	–1379.380	–1049.512	–683.760	22.322
	1700.00	168.087	464.890	336.098	–635.053	218.947	–1425.366	–1047.983	–660.946	20.308
	1800.00	169.712	474.543	343.523	–618.163	235.837	–1472.342	–1046.305	–638.227	18.521
	1900.00	171.335	483.763	350.663	–601.111	252.889	–1520.260	–1044.476	–615.605	16.924
	2000.00	172.956	492.592	357.541	–583.896	270.104	–1569.081	–1042.496	–593.084	15.490

References

Phase	H / S	C _p	Remarks
SOL	Nb1	Nb1,e	Mi1 MPT= 2300.



430.156

URANIUM DISULFATE

U(SO4)2

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	173.460	161.084	161.084	–2317.936	0.000	–2365.963	–2317.936	–2087.195	365.668
	300.00	173.887	162.158	161.087	–2317.615	0.321	–2366.262	–2317.968	–2085.764	363.164
	400.00	196.983	215.346	168.184	–2299.071	18.865	–2385.209	–2323.339	–2008.002	262.218
	500.00	220.078	261.782	182.346	–2278.218	39.718	–2409.109	–2325.608	–1928.916	201.512
	600.00	243.174	303.949	199.148	–2255.056	62.880	–2437.425	–2325.570	–1849.537	161.017
	700.00	266.270	343.168	216.950	–2229.583	88.353	–2469.801	–2323.370	–1770.348	132.105
	800.00	289.365	380.231	235.063	–2201.802	116.134	–2505.987	–2319.641	–1691.584	110.449
	900.00	312.461	415.647	253.174	–2171.710	146.226	–2545.793	–2419.974	–1611.068	93.504
	1000.00	335.557	449.764	271.137	–2139.309	178.627	–2589.073	–2412.343	–1521.549	79.478

References

Phase	H / S	C _p
SOL	Nb1/Ra1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	54.811	96.525	96.525	-275.726	0.000	-304.505	-275.726	-276.911	48.514
	300.00	54.823	96.864	96.526	-275.625	0.101	-304.684	-275.723	-276.918	48.216
	400.00	55.463	112.723	98.684	-270.110	5.616	-315.200	-275.745	-277.324	36.215
	500.00	56.103	125.168	102.780	-264.532	11.194	-327.116	-282.059	-277.596	29.000
	600.00	56.743	135.454	107.393	-258.890	16.836	-340.162	-283.265	-276.593	24.080
	700.00	57.384	144.249	112.045	-253.183	22.543	-354.157	-284.708	-275.371	20.548
	800.00	58.024	151.953	116.562	-247.413	28.313	-368.975	-286.437	-273.923	17.885
	900.00	58.664	158.824	120.883	-241.579	34.147	-384.520	-288.507	-272.238	15.800
	1000.00	59.304	165.038	124.992	-235.680	40.046	-400.718	-293.375	-270.138	14.111
	1100.00	59.944	170.721	128.895	-229.718	46.008	-417.510	-353.047	-262.540	12.467
	1200.00	60.584	175.964	132.602	-223.691	52.035	-434.848	-352.917	-254.318	11.070
	1300.00	61.224	180.838	136.127	-217.601	58.125	-452.691	-352.711	-246.109	9.889
	1400.00	61.865	185.399	139.485	-211.446	64.280	-471.005	-352.429	-237.919	8.877
	1500.00	62.505	189.689	142.690	-205.228	70.498	-489.762	-361.503	-229.145	7.980
	1600.00	63.145	193.743	145.756	-198.945	76.781	-508.935	-362.030	-220.304	7.192

References

Phase	H / S	C _p
SOL	Mi1	Mi1,e

50.941										
VANADIUM										
V										
Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _r
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
SOL	298.15	24.894	28.911	28.911	0.000	0.000	-8.620	0.000	0.000	0.000
	300.00	24.930	29.066	28.912	0.046	0.046	-8.674	0.000	0.000	0.000
	400.00	26.233	36.440	29.908	2.612	2.612	-11.963	0.000	0.000	0.000
	500.00	26.945	42.375	31.828	5.274	5.274	-15.914	0.000	0.000	0.000
	600.00	27.488	47.337	34.010	7.996	7.996	-20.406	0.000	0.000	0.000
	700.00	28.032	51.615	36.226	10.772	10.772	-25.359	0.000	0.000	0.000
	800.00	28.660	55.397	38.391	13.605	13.605	-30.713	0.000	0.000	0.000
	900.00	29.495	58.817	40.473	16.510	16.510	-36.426	0.000	0.000	0.000
	1000.00	30.489	61.976	42.467	19.508	19.508	-42.467	0.000	0.000	0.000
	1100.00	31.552	64.931	44.377	22.610	22.610	-48.814	0.000	0.000	0.000
	1200.00	32.679	67.724	46.207	25.821	25.821	-55.448	0.000	0.000	0.000
	1300.00	33.873	70.386	47.965	29.148	29.148	-62.355	0.000	0.000	0.000
	1400.00	35.142	72.943	49.659	32.598	32.598	-69.522	0.000	0.000	0.000
	1500.00	36.488	75.413	51.294	36.179	36.179	-76.940	0.000	0.000	0.000
	1600.00	37.911	77.813	52.876	39.898	39.898	-84.602	0.000	0.000	0.000
	1700.00	39.411	80.156	54.412	43.763	43.763	-92.501	0.000	0.000	0.000
	1800.00	40.981	82.452	55.907	47.782	47.782	-100.632	0.000	0.000	0.000
	1900.00	42.615	84.712	57.363	51.962	51.962	-108.990	0.000	0.000	0.000
	2000.00	44.305	86.940	58.787	56.307	56.307	-117.573	0.000	0.000	0.000
	2100.00	46.042	89.144	60.180	60.824	60.824	-126.377	0.000	0.000	0.000
	2175.00	47.368	90.782	61.207	64.327	64.327	-133.125	0.000	0.000	0.000
LIQ			9.622		20.928					
	2175.00	41.840	100.405	61.207	85.255	85.255	-133.125	0.000	0.000	0.000
	2200.00	41.840	100.883	61.655	86.301	86.301	-135.641	0.000	0.000	0.000
	2300.00	41.840	102.743	63.401	90.485	90.485	-145.823	0.000	0.000	0.000
	2400.00	41.840	104.523	65.078	94.669	94.669	-156.187	0.000	0.000	0.000
	2500.00	41.840	106.231	66.690	98.853	98.853	-166.725	0.000	0.000	0.000
	2600.00	41.840	107.872	68.243	103.037	103.037	-177.431	0.000	0.000	0.000
	2700.00	41.840	109.451	69.740	107.221	107.221	-188.297	0.000	0.000	0.000
	2800.00	41.840	110.973	71.185	111.405	111.405	-199.319	0.000	0.000	0.000
	2900.00	41.840	112.441	72.583	115.589	115.589	-210.490	0.000	0.000	0.000
	3000.00	41.840	113.860	73.935	119.773	119.773	-221.806	0.000	0.000	0.000
	3100.00	41.840	115.231	75.245	123.957	123.957	-233.261	0.000	0.000	0.000
	3200.00	41.840	116.560	76.516	128.141	128.141	-244.850	0.000	0.000	0.000
	3300.00	41.840	117.847	77.749	132.325	132.325	-256.571	0.000	0.000	0.000
	3400.00	41.840	119.096	78.947	136.509	136.509	-268.419	0.000	0.000	0.000
	3500.00	41.840	120.309	80.111	140.693	140.693	-280.389	0.000	0.000	0.000
	3600.00	41.840	121.488	81.244	144.877	144.877	-292.479	0.000	0.000	0.000
	3679.00	41.840	122.396	82.118	148.182	148.182	-302.113	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL	Hu1	Hu1	
LIQ	Hu1	Hu1	Hu1 BPT= 3679., L= 451.84 kJ

V[g]		VANADIUM (GAS)								50.941
Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
GAS	298.15	26.012	182.298	182.298	514.214	0.000	459.862	514.214	468.482	-82.076
	300.00	25.983	182.458	182.298	514.262	0.048	459.525	514.216	468.198	-81.521
	400.00	24.645	189.730	183.299	516.787	2.573	440.895	514.174	452.858	-59.137
	500.00	24.199	195.167	185.151	519.222	5.008	421.639	513.949	437.553	-45.711
	600.00	24.291	199.582	187.199	521.644	7.430	401.895	513.648	422.301	-36.765
	700.00	24.579	203.347	189.243	524.087	9.873	381.744	513.315	407.102	-30.378
	800.00	24.881	206.650	191.217	526.560	12.346	361.241	512.955	391.953	-25.592
	900.00	25.112	209.594	193.098	529.061	14.847	340.426	512.551	376.852	-21.872
	1000.00	25.243	212.248	194.883	531.579	17.365	319.331	512.071	361.799	-18.898
	1100.00	25.272	214.656	196.572	534.106	19.892	297.984	511.496	346.799	-16.468
	1200.00	25.219	216.853	198.172	536.631	22.417	276.407	510.810	331.855	-14.445
	1300.00	25.111	218.868	199.688	539.148	24.934	254.620	510.000	316.974	-12.736
	1400.00	24.982	220.724	201.125	541.652	27.438	232.639	509.055	302.161	-11.274
	1500.00	24.874	222.444	202.490	544.145	29.931	210.479	507.966	287.420	-10.009
	1600.00	24.773	224.046	203.787	546.627	32.413	188.154	506.730	272.756	-8.905
	1700.00	24.663	225.544	205.024	549.099	34.885	165.674	505.336	258.175	-7.933
	1800.00	24.569	226.951	206.203	551.561	37.347	143.048	503.778	243.680	-7.071
	1900.00	24.504	228.278	207.330	554.014	39.800	120.286	502.052	229.276	-6.303
	2000.00	24.472	229.534	208.409	556.462	42.248	97.395	500.155	214.968	-5.614
	2100.00	24.479	230.728	209.444	558.910	44.696	74.382	498.085	200.759	-4.994
	2200.00	24.523	231.867	210.438	561.360	47.146	51.251	475.058	186.892	-4.437
	2300.00	24.606	232.959	211.393	563.816	49.602	28.010	473.331	173.832	-3.948
	2400.00	24.726	234.009	212.314	566.282	52.068	4.661	471.613	160.848	-3.501
	2500.00	24.882	235.021	213.202	568.762	54.548	-18.791	469.909	147.934	-3.091
	2600.00	25.073	236.001	214.060	571.260	57.046	-42.342	468.222	135.088	-2.714
	2700.00	25.297	236.951	214.890	573.778	59.564	-65.990	466.557	122.307	-2.366
	2800.00	25.553	237.876	215.695	576.320	62.106	-89.732	464.915	109.587	-2.044
	2900.00	25.839	238.777	216.475	578.889	64.675	-113.564	463.300	96.926	-1.746
	3000.00	26.155	239.658	217.233	581.489	67.275	-137.486	461.716	84.319	-1.468
	3100.00	26.498	240.522	217.971	584.121	69.907	-161.495	460.164	71.765	-1.209
	3200.00	26.869	241.369	218.689	586.789	72.575	-185.590	458.648	59.260	-0.967
	3300.00	27.266	242.201	219.389	589.496	75.282	-209.769	457.171	46.802	-0.741
	3400.00	27.687	243.022	220.072	592.243	78.029	-234.030	455.734	34.389	-0.528
	3500.00	28.134	243.831	220.739	595.034	80.820	-258.373	454.341	22.017	-0.329
	3600.00	28.603	244.630	221.392	597.871	83.657	-282.796	452.994	9.684	-0.141
	3700.00	29.096	245.420	222.030	600.756	86.542	-307.298	0.000	0.000	0.000
	3800.00	29.611	246.203	222.656	603.691	89.477	-331.879	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

61.753

VANADIUM BORIDE

VB

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	36.018	29.288	29.288	-138.490	0.000	-147.222	-138.490	-136.864	23.978
	300.00	36.157	29.511	29.289	-138.423	0.067	-147.277	-138.490	-136.854	23.828
	400.00	41.703	40.748	30.783	-134.504	3.986	-150.803	-138.502	-136.307	17.800
	500.00	45.252	50.457	33.770	-130.147	8.343	-155.375	-138.537	-135.755	14.182
	600.00	47.967	58.956	37.274	-125.481	13.009	-160.854	-138.574	-135.194	11.770
	700.00	50.245	66.525	40.922	-120.568	17.922	-167.135	-138.591	-134.630	10.046
	800.00	52.252	73.368	44.557	-115.441	23.049	-174.135	-138.581	-134.064	8.753
	900.00	54.069	79.629	48.111	-110.123	28.367	-181.789	-138.550	-133.501	7.748
	1000.00	55.736	85.413	51.555	-104.632	33.858	-190.045	-138.520	-132.942	6.944
	1100.00	57.278	90.799	54.881	-98.980	39.510	-198.859	-138.500	-132.385	6.286
	1200.00	58.709	95.845	58.086	-93.180	45.310	-208.194	-138.499	-131.829	5.738
	1300.00	60.598	100.623	61.176	-87.209	51.281	-218.019	-138.497	-131.274	5.275
	1400.00	62.443	105.181	64.158	-81.058	57.432	-228.311	-138.485	-130.718	4.877
	1500.00	64.372	109.554	67.039	-74.718	63.772	-239.049	-138.460	-130.164	4.533
	1600.00	66.385	113.773	69.829	-68.181	70.309	-250.217	-138.418	-129.613	4.231
	1700.00	68.483	117.860	72.535	-61.438	77.052	-261.799	-138.357	-129.064	3.966
	1800.00	70.665	121.835	75.164	-54.481	84.009	-273.785	-138.274	-128.520	3.730
	1900.00	72.932	125.716	77.723	-47.302	91.188	-286.163	-138.166	-127.980	3.518
	2000.00	75.285	129.517	80.218	-39.892	98.598	-298.925	-138.029	-127.448	3.329
	2100.00	77.722	133.249	82.654	-32.242	106.248	-312.064	-137.859	-126.923	3.157
	2200.00	80.245	136.922	85.038	-24.345	114.145	-325.573	-137.659	-126.417	2.996
	2300.00	82.854	140.546	87.373	-16.190	122.300	-339.447	-137.435	-125.930	2.832
	2400.00	85.547	144.129	89.663	-7.771	130.719	-353.681	-137.187	-125.461	2.661
	2500.00	88.326	147.677	91.913	0.922	139.412	-368.272	-136.917	-125.018	2.481

References

Phase	H / S	C _p	Remarks
SOL	e	M5	DPT= 2843. (peritec.)

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	46.978	30.125	30.125	-203.761	0.000	-212.743	-203.761	-200.646	35.152
	300.00	47.234	30.416	30.126	-203.674	0.087	-212.799	-203.762	-200.627	34.932
	400.00	57.408	45.540	32.119	-198.393	5.368	-216.608	-203.777	-199.579	26.062
	500.00	63.795	59.078	36.183	-192.313	11.448	-221.853	-203.820	-198.526	20.740
	600.00	68.544	71.147	41.023	-185.687	18.074	-228.375	-203.877	-197.461	17.191
	700.00	72.387	82.011	46.116	-178.635	25.126	-236.042	-203.910	-196.389	14.655
	800.00	75.633	91.894	51.229	-171.229	32.532	-244.745	-203.905	-195.315	12.753
	900.00	78.429	100.968	56.259	-163.523	40.238	-254.394	-203.867	-194.243	11.274
	1000.00	80.850	109.359	61.154	-155.556	48.205	-264.915	-203.823	-193.176	10.090
	1100.00	82.943	117.166	65.896	-147.364	56.397	-276.246	-203.793	-192.113	9.123
	1200.00	84.732	124.462	70.476	-138.978	64.783	-288.332	-203.795	-191.051	8.316
	1300.00	87.355	131.357	74.896	-130.361	73.400	-301.126	-203.789	-189.989	7.634
	1400.00	89.806	137.920	79.165	-121.504	82.257	-314.592	-203.761	-188.929	7.049
	1500.00	92.342	144.202	83.293	-112.397	91.364	-328.700	-203.703	-187.871	6.542
	1600.00	94.962	150.245	87.290	-103.033	100.728	-343.424	-203.610	-186.819	6.099
	1700.00	97.666	156.083	91.166	-93.402	110.359	-358.742	-203.477	-185.773	5.708
	1800.00	100.455	161.744	94.930	-83.497	120.264	-374.635	-203.300	-184.736	5.361
	1900.00	103.329	167.252	98.592	-73.308	130.453	-391.086	-203.074	-183.711	5.051
	2000.00	106.288	172.627	102.160	-62.828	140.933	-408.081	-202.795	-182.699	4.772
	2100.00	109.333	177.886	105.641	-52.048	151.713	-425.608	-202.457	-181.702	4.520
	2200.00	112.462	183.044	109.043	-40.959	162.802	-443.655	-222.839	-180.483	4.285
	2300.00	115.677	188.113	112.371	-29.552	174.209	-462.213	-221.678	-178.583	4.056
	2400.00	118.977	193.106	115.631	-17.820	185.941	-481.275	-320.777	-174.601	3.800
	2500.00	122.363	198.031	118.829	-5.754	198.007	-500.832	-319.245	-168.541	3.521

References

Phase	H / S	C _p	Remarks
SOL	e	M5	MPT= 3020.

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
SOL	298.15	97.096	86.944	86.944	-303.758	0.000	-329.680	-303.758	-300.344	52.619
	300.00	97.395	87.545	86.945	-303.578	0.180	-329.842	-303.758	-300.323	52.291
	400.00	109.403	117.368	90.930	-293.183	10.575	-340.130	-303.792	-299.174	39.068
	500.00	117.212	142.665	98.813	-281.832	21.926	-353.164	-303.886	-298.010	31.133
	600.00	123.323	164.593	107.989	-269.795	33.963	-368.551	-303.977	-296.825	25.841
	700.00	128.591	184.007	117.488	-257.195	46.563	-385.999	-304.014	-295.629	22.060
	800.00	133.375	201.494	126.913	-244.093	59.665	-405.289	-303.979	-294.433	19.225
	900.00	137.847	217.464	136.100	-230.530	73.228	-426.248	-303.893	-293.245	17.020
	1000.00	142.094	232.209	144.983	-216.531	87.227	-448.741	-303.815	-292.066	15.256
	1100.00	146.170	245.945	153.544	-202.117	101.641	-472.656	-303.765	-290.894	13.813
	1200.00	150.105	258.833	161.786	-187.302	116.456	-497.901	-303.761	-289.725	12.611
	1300.00	155.038	271.051	169.725	-172.034	131.724	-524.401	-303.757	-288.555	11.594
	1400.00	159.966	282.720	177.382	-156.286	147.472	-552.093	-303.738	-287.386	10.723
	1500.00	165.146	293.931	184.781	-140.033	163.725	-580.929	-303.696	-286.220	9.967
	1600.00	170.578	304.762	191.943	-123.248	180.510	-610.867	-303.622	-285.057	9.306
	1700.00	176.264	315.272	198.890	-105.908	197.850	-641.871	-303.511	-283.900	8.723
	1800.00	182.205	325.514	205.641	-87.987	215.771	-673.912	-303.355	-282.750	8.205
	1900.00	188.400	335.530	212.215	-69.459	234.299	-706.966	-303.148	-281.611	7.742
	2000.00	194.851	345.357	218.627	-50.299	253.459	-741.012	-302.880	-280.484	7.325
	2100.00	201.557	355.025	224.893	-30.480	273.278	-776.033	-302.538	-279.372	6.949
	2173.00	206.614	361.998	229.382	-15.583	288.175	-802.204	-302.234	-278.572	6.696

References

Phase	H / S	C _p	Remarks
SOL	e	M5	DPT= 2173. (peritec.)

V3B4

TRIVANADIUM TETRABORIDE

196.068

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	119.013	88.659	88.659	-486.599	0.000	-513.033	-486.599	-480.220	84.133
	300.00	119.547	89.397	88.661	-486.378	0.221	-513.197	-486.601	-480.180	83.607
	400.00	140.812	126.993	93.643	-473.259	13.340	-524.056	-486.639	-478.035	62.425
	500.00	154.299	159.950	103.681	-458.465	28.134	-538.440	-486.752	-475.872	49.714
	600.00	164.477	189.016	115.529	-442.507	44.092	-555.917	-486.883	-473.683	41.238
	700.00	172.876	215.019	127.917	-425.628	60.971	-576.141	-486.951	-471.477	35.182
	800.00	180.138	238.588	140.301	-407.969	78.630	-598.839	-486.925	-469.267	30.640
	900.00	186.567	260.183	152.438	-389.628	96.971	-623.793	-486.826	-467.065	27.108
	1000.00	192.323	280.144	164.223	-370.678	115.921	-650.822	-486.721	-464.875	24.283
	1100.00	197.500	298.721	175.615	-351.182	135.417	-679.776	-486.650	-462.694	21.972
	1200.00	202.151	316.109	186.606	-331.196	155.403	-710.526	-486.652	-460.517	20.046
	1300.00	208.551	332.561	197.206	-310.637	175.962	-742.967	-486.640	-458.340	18.416
	1400.00	214.693	348.240	207.438	-289.477	197.122	-777.013	-486.589	-456.164	17.020
	1500.00	221.086	363.269	217.329	-267.690	218.909	-812.593	-486.481	-453.995	15.809
	1600.00	227.732	377.748	226.906	-245.252	241.347	-849.648	-486.304	-451.834	14.751
	1700.00	234.631	391.760	236.193	-222.136	264.463	-888.127	-486.049	-449.687	13.817
	1800.00	241.785	405.372	245.215	-198.317	288.282	-927.987	-485.706	-447.558	12.988
	1900.00	249.194	418.642	253.995	-173.770	312.829	-969.190	-485.263	-445.450	12.246
	2000.00	256.858	431.618	262.553	-148.470	338.129	-1011.705	-484.710	-443.368	11.580
	2100.00	264.778	444.341	270.908	-122.390	364.209	-1055.505	-484.033	-441.317	10.977
	2200.00	272.953	456.846	279.076	-95.506	391.093	-1100.566	-545.567	-438.582	10.413
	2300.00	281.384	469.164	287.074	-67.791	418.808	-1146.868	-542.528	-433.785	9.852
	2400.00	290.072	481.322	294.915	-39.220	447.379	-1194.394	-739.803	-424.860	9.247
	2500.00	299.015	493.344	302.612	-9.768	476.831	-1243.128	-735.602	-411.820	8.605

References

Phase	H / S	C _p	Remarks
SOL	e	M5	MPT= 2883.

VBr2

VANADIUM DIBROMIDE

210.749

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	77.381	125.520	125.520	-364.426	0.000	-401.850	-364.426	-347.849	60.942
	300.00	77.404	125.999	125.521	-364.283	0.143	-402.082	-364.469	-347.746	60.548
	400.00	78.659	148.438	128.573	-356.480	7.946	-415.855	-393.714	-336.075	43.887
	500.00	79.914	166.126	134.375	-348.551	15.875	-431.614	-392.139	-321.847	33.623
	600.00	81.170	180.807	140.925	-340.497	23.929	-448.981	-390.525	-307.939	26.809
	700.00	82.425	193.413	147.543	-332.317	32.109	-467.706	-388.857	-294.306	21.961
	800.00	83.680	204.501	153.984	-324.012	40.414	-487.613	-387.133	-280.916	18.342
	900.00	84.935	214.430	160.158	-315.581	48.845	-508.568	-385.364	-267.745	15.540

References

Phase	H / S	C _p
SOL	Tk1	e

290.654	VANADIUM TRIBROMIDE									VBr3
Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	101.653	142.256	142.256	-446.014	0.000	-488.428	-446.014	-411.736	72.134
	300.00	101.713	142.885	142.258	-445.826	0.188	-488.691	-446.082	-411.523	71.652
	400.00	104.935	172.587	146.286	-435.493	10.521	-504.528	-490.039	-390.840	51.038
	500.00	108.156	196.349	153.999	-424.839	21.175	-523.013	-487.584	-366.320	38.269
	600.00	111.378	216.353	162.767	-413.862	32.152	-543.674	-484.907	-342.315	29.801
	700.00	114.600	233.764	171.691	-402.563	43.451	-566.198	-481.987	-318.777	23.787
	800.00	117.821	249.277	180.437	-390.942	55.072	-590.364	-478.821	-295.675	19.306
	900.00	121.043	263.340	188.879	-378.999	67.015	-616.005	-475.418	-272.983	15.844
	1000.00	124.265	276.260	196.980	-366.734	79.280	-642.994	-471.800	-250.683	13.094

References

Phase	H / S	C _p
SOL	Tk1	e

370.557	VANADIUM TETRABROMIDE (GAS)									VBr4[g]
Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	99.751	334.829	334.829	-351.456	0.000	-451.285	-351.456	-351.903	61.652
	300.00	99.853	335.447	334.831	-351.271	0.185	-451.905	-351.597	-351.905	61.272
	400.00	103.496	364.745	338.801	-341.078	10.378	-486.976	-412.935	-339.380	44.318
	500.00	105.228	388.046	346.400	-330.633	20.823	-524.656	-412.535	-321.037	33.538
	600.00	106.206	407.325	354.994	-320.057	31.399	-564.452	-412.119	-302.776	26.359
	700.00	106.829	423.747	363.672	-309.403	42.053	-606.026	-411.711	-284.585	21.236
	800.00	107.263	438.042	372.094	-298.698	52.758	-649.131	-411.334	-266.450	17.397
	900.00	107.587	450.695	380.138	-287.954	63.502	-693.580	-411.010	-248.360	14.414
	1000.00	107.843	462.044	387.771	-277.182	74.274	-739.227	-410.768	-230.301	12.030

References

Phase	H / S	C _p
GAS	Tk1/Ku1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	31.966	25.104	25.104	–101.671	0.000	–109.156	–101.671	–99.030	17.350
	300.00	32.148	25.302	25.105	–101.612	0.059	–109.202	–101.672	–99.013	17.240
	400.00	39.078	35.613	26.463	–98.011	3.660	–112.256	–101.550	–98.138	12.816
	500.00	43.034	44.790	29.230	–93.891	7.780	–116.286	–101.263	–97.317	10.167
	600.00	45.777	52.891	32.512	–89.444	12.227	–121.178	–100.928	–96.558	8.406
	700.00	47.913	60.114	35.949	–84.756	16.915	–126.835	–100.581	–95.857	7.153
	800.00	49.697	66.631	39.383	–79.873	21.798	–133.178	–100.225	–95.207	6.216
	900.00	51.249	72.576	42.746	–74.824	26.847	–140.142	–99.869	–94.601	5.491
	1000.00	52.635	78.049	46.006	–69.629	32.042	–147.677	–99.537	–94.034	4.912
	1100.00	53.890	83.125	49.153	–64.301	37.370	–155.739	–99.237	–93.498	4.440
	1200.00	55.037	87.864	52.183	–58.854	42.817	–164.291	–98.977	–92.988	4.048
	1300.00	56.089	92.311	55.101	–53.297	48.374	–173.302	–98.764	–92.498	3.717
	1400.00	57.055	96.504	57.910	–47.639	54.032	–182.745	–98.606	–92.023	3.433
	1500.00	57.941	100.471	60.616	–41.889	59.782	–192.595	–98.513	–91.556	3.188
	1600.00	58.751	104.237	63.226	–36.054	65.617	–202.832	–98.495	–91.093	2.974
	1700.00	59.490	107.821	65.744	–30.141	71.530	–213.436	–98.563	–90.629	2.785

References

Phase	H / S	C _p
SOL	Pa3	Pa3

113.894 <div>DIVANADIUM CARBIDE</div> <div>V2C</div>										
Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	55.900	51.129	51.129	–117.152	0.000	–132.396	–117.152	–113.445	19.875
	300.00	56.080	51.475	51.130	–117.048	0.104	–132.491	–117.156	–113.422	19.748
	400.00	64.091	68.780	53.435	–111.014	6.138	–138.526	–117.292	–112.150	14.645
	500.00	69.713	83.718	58.032	–104.309	12.843	–146.168	–117.241	–110.868	11.582
	600.00	73.999	96.822	63.427	–97.115	20.037	–155.208	–117.071	–109.608	9.542
	700.00	77.490	108.499	69.047	–89.536	27.616	–165.485	–116.821	–108.382	8.088
	800.00	80.466	119.046	74.648	–81.634	35.518	–176.871	–116.511	–107.198	6.999
	900.00	83.082	128.677	80.124	–73.454	43.698	–189.264	–116.173	–106.054	6.155
	1000.00	85.433	137.554	85.429	–65.027	52.125	–202.581	–115.861	–104.947	5.482
	1100.00	87.581	145.799	90.547	–56.374	60.778	–216.754	–115.601	–103.868	4.932
	1200.00	89.572	153.506	95.476	–47.516	69.636	–231.723	–115.410	–102.810	4.475
	1300.00	91.439	160.750	100.221	–38.464	78.688	–247.439	–115.304	–101.765	4.089
	1400.00	93.209	167.592	104.791	–29.231	87.921	–263.860	–115.300	–100.725	3.758
	1500.00	94.906	174.081	109.196	–19.825	97.327	–280.946	–115.415	–99.681	3.471
	1600.00	96.550	180.259	113.446	–10.252	106.900	–298.666	–115.664	–98.624	3.220
	1700.00	98.160	186.160	117.551	–0.516	116.636	–316.989	–116.064	–97.548	2.997
	1800.00	99.753	191.816	121.521	9.380	126.532	–335.889	–116.626	–96.443	2.799
	1900.00	101.346	197.252	125.365	19.435	136.587	–355.345	–117.365	–95.303	2.620
	2000.00	102.955	202.491	129.091	29.650	146.802	–375.333	–118.288	–94.118	2.458

References

Phase	H / S	C _p
SOL	Pa3	Pa3

121.847 <div>VANADIUM DICHLORIDE</div> <div>VCl2</div>										
Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	71.868	97.069	97.069	–451.872	0.000	–480.813	–451.872	–405.671	71.072
	300.00	71.934	97.514	97.070	–451.739	0.133	–480.993	–451.848	–405.384	70.584
	400.00	74.681	118.616	99.929	–444.397	7.475	–491.844	–450.540	–390.093	50.941
	500.00	76.594	135.495	105.410	–436.829	15.043	–504.577	–449.204	–375.135	39.190
	600.00	78.178	149.603	111.631	–429.089	22.783	–518.851	–447.821	–360.451	31.380
	700.00	79.607	161.763	117.944	–421.199	30.673	–534.433	–446.383	–346.002	25.819
	800.00	80.953	172.482	124.104	–413.170	38.702	–551.156	–444.894	–331.763	21.662
	900.00	82.251	182.092	130.023	–405.010	46.862	–568.892	–443.363	–317.713	18.440
	1000.00	83.519	190.824	135.673	–396.721	55.151	–587.545	–441.814	–303.835	15.871
	1100.00	84.768	198.843	141.056	–388.307	63.565	–607.033	–440.255	–290.112	13.776
	1200.00	86.004	206.271	146.185	–379.768	72.104	–627.294	–438.691	–276.532	12.037
	1300.00	87.230	213.204	151.076	–371.106	80.766	–648.271	–437.130	–263.082	10.571

References

Phase	H / S	C _p	Remarks
SOL	Pa2/Br1	Pa2	Br1,Tk1 NSPT= 1300. / MPT= 1623.

VC12[g]

VANADIUM DICHLORIDE (GAS)

121.847

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [- -]
GAS	298.15	74.471	284.203	284.203	-203.080	0.000	-287.815	-203.080	-212.673	37.259
	300.00	74.493	284.664	284.204	-202.942	0.138	-288.341	-203.051	-212.733	37.040
	400.00	75.433	306.233	287.139	-195.442	7.638	-317.936	-201.585	-216.185	28.231
	500.00	76.111	323.141	292.709	-187.864	15.216	-349.434	-200.239	-219.993	22.983
	600.00	76.686	337.070	298.975	-180.224	22.856	-382.465	-198.956	-224.065	19.507
	700.00	77.212	348.931	305.285	-172.528	30.552	-416.780	-197.713	-228.349	17.040
	800.00	77.712	359.274	311.401	-164.782	38.298	-452.201	-196.505	-232.808	15.201
	900.00	78.196	368.455	317.240	-156.987	46.093	-488.596	-195.340	-237.417	13.779
	1000.00	78.672	376.718	322.781	-149.143	53.937	-525.861	-194.236	-242.152	12.649
	1100.00	79.141	384.239	328.032	-141.252	61.828	-563.915	-193.201	-246.994	11.729
	1200.00	79.606	391.145	333.007	-133.315	69.765	-602.689	-192.238	-251.927	10.966
	1300.00	80.068	397.535	337.728	-125.331	77.749	-642.127	-191.355	-256.938	10.324
	1400.00	80.528	403.485	342.215	-117.301	85.779	-682.181	-190.556	-262.013	9.776
	1500.00	80.987	409.057	346.487	-109.226	93.854	-722.811	-189.850	-267.142	9.303
	1600.00	81.444	414.298	350.563	-101.104	101.976	-763.981	-189.243	-272.316	8.890
	1700.00	81.901	419.250	354.459	-92.937	110.143	-805.661	-188.745	-277.523	8.527
	1800.00	82.356	423.944	358.190	-84.724	118.356	-847.823	-188.361	-282.757	8.205
	1900.00	82.811	428.409	361.770	-76.466	126.614	-890.442	-188.100	-288.009	7.918
	2000.00	83.266	432.668	365.209	-68.162	134.918	-933.498	-187.966	-293.272	7.659

References

Phase	H / S	C _p
GAS	Tk1,e	e

VC13

VANADIUM TRICHLORIDE

157.300

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [- -]
SOL	298.15	93.174	130.096	130.096	-581.120	0.000	-619.908	-581.120	-511.505	89.614
	300.00	93.325	130.673	130.098	-580.947	0.173	-620.149	-581.088	-511.073	88.986
	400.00	98.935	158.386	133.838	-571.301	9.819	-634.655	-579.208	-488.012	63.728
	500.00	102.019	180.821	141.063	-561.241	19.879	-651.652	-577.166	-465.446	48.625
	600.00	104.110	199.616	149.298	-550.929	30.191	-670.699	-575.029	-443.302	38.593
	700.00	105.730	215.790	157.668	-540.435	40.685	-691.488	-572.826	-421.521	31.454
	800.00	107.101	230.000	165.840	-529.791	51.329	-713.792	-570.574	-400.059	26.121
	900.00	108.326	242.687	173.686	-519.019	62.101	-737.437	-568.295	-378.881	21.990

References

Phase	H / S	C _p
SOL	Pa2	Pa2

192.752 VANADIUM TETRACHLORIDE VCI4										
Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
LIQ	298.15	161.712	254.998	254.998	–569.401	0.000	–645.429	–569.401	–503.764	88.257
	300.00	161.712	255.998	255.001	–569.102	0.299	–645.901	–569.274	–503.357	87.642
	400.00	161.712	302.520	261.344	–552.931	16.470	–673.939	–562.603	–482.402	62.995
	422.70	161.712	311.446	263.797	–549.260	20.141	–680.908	–561.136	–477.891	59.055

References

Phase	H / S	C _p	Remarks
LIQ	Nb1,e	e	Pa2/e MPT= 247., L= 2.30 kJ / BPT= 422.7, L= 36.0 kJ

192.752 VANADIUM TETRACHLORIDE (GAS) VCI4[g]										
Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	93.135	362.398	362.398	–525.502	0.000	–633.551	–525.502	–491.887	86.176
	300.00	93.341	362.975	362.400	–525.330	0.172	–634.222	–525.501	–491.678	85.609
	400.00	100.489	390.959	366.166	–515.585	9.917	–671.969	–525.257	–480.432	62.738
	500.00	103.656	413.765	373.479	–505.359	20.143	–712.241	–524.834	–469.272	49.025
	600.00	105.256	432.821	381.825	–494.905	30.597	–754.597	–524.373	–458.203	39.890
	700.00	106.116	449.117	390.303	–484.332	41.170	–798.714	–523.929	–447.210	33.371
	800.00	106.582	463.321	398.561	–473.694	51.808	–844.351	–523.536	–436.278	28.486
	900.00	106.818	475.890	406.468	–463.023	62.479	–891.324	–523.220	–425.391	24.689
	1000.00	106.912	487.150	413.983	–452.336	73.166	–939.485	–523.014	–414.533	21.653
	1100.00	106.913	497.340	421.105	–441.644	83.858	–988.718	–522.931	–403.690	19.170
	1200.00	106.851	506.641	427.852	–430.955	94.547	–1038.924	–522.981	–392.849	17.100
	1300.00	106.744	515.189	434.245	–420.275	105.227	–1090.021	–523.174	–381.998	15.349
	1400.00	106.604	523.095	440.313	–409.607	115.895	–1141.940	–523.519	–371.126	13.847
	1500.00	106.441	530.445	446.080	–398.955	126.547	–1194.622	–524.024	–360.225	12.544
	1600.00	106.260	537.308	451.569	–388.320	137.182	–1248.013	–524.701	–349.283	11.403
	1700.00	106.064	543.745	456.804	–377.703	147.799	–1302.069	–525.556	–338.295	10.395
	1800.00	105.857	549.801	461.804	–367.107	158.395	–1356.749	–526.600	–327.250	9.497
	1900.00	105.642	555.519	466.587	–356.532	168.970	–1412.018	–527.839	–316.142	8.691
	2000.00	105.420	560.932	471.170	–345.979	179.523	–1467.843	–529.281	–304.964	7.965

References

Phase	H / S	C _p
GAS	Nb1,e	Pa2

VF3

VANADIUM TRIFLUORIDE

107.937

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	89.879	97.069	97.069	-1297.040	0.000	-1325.981	-1297.040	-1226.666	214.907
	300.00	90.082	97.625	97.071	-1296.874	0.166	-1326.161	-1297.007	-1226.230	213.506
	400.00	97.161	124.658	100.708	-1287.460	9.580	-1337.323	-1294.980	-1202.934	157.087
	500.00	100.378	146.726	107.775	-1277.565	19.475	-1350.927	-1292.791	-1180.174	123.292
	600.00	102.076	165.192	115.848	-1267.434	29.606	-1366.549	-1290.591	-1157.858	100.801
	700.00	103.055	181.007	124.054	-1257.173	39.867	-1383.878	-1288.431	-1135.907	84.762
	800.00	103.652	194.810	132.054	-1246.835	50.205	-1402.683	-1286.336	-1114.262	72.754
	900.00	104.027	207.042	139.720	-1236.450	60.590	-1422.788	-1284.327	-1092.875	63.429
	1000.00	104.263	218.015	147.010	-1226.034	71.006	-1444.050	-1282.431	-1071.705	55.980

References

Phase	H / S	C _p	Remarks
SOL	Pa2	Pa2	Tk1 TPT= 793. / MPT= 1679.

VF4

VANADIUM TETRAFLUORIDE

126.935

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	107.037	121.336	121.336	-1403.314	0.000	-1439.490	-1403.314	-1309.944	229.497
	300.00	107.110	121.998	121.338	-1403.116	0.198	-1439.715	-1403.278	-1309.364	227.981
	400.00	111.085	153.356	125.587	-1392.206	11.108	-1453.549	-1401.362	-1278.350	166.935
	500.00	115.060	178.571	133.741	-1380.899	22.415	-1470.185	-1399.442	-1247.818	130.359
	600.00	119.035	199.901	143.034	-1369.194	34.120	-1489.135	-1397.406	-1217.682	106.009
	700.00	123.010	218.548	152.517	-1357.092	46.222	-1510.076	-1395.179	-1187.902	88.642
	800.00	126.984	235.234	161.831	-1344.592	58.722	-1532.779	-1392.725	-1158.455	75.639
	900.00	130.959	250.420	170.843	-1331.695	71.619	-1557.073	-1390.028	-1129.331	65.545
	1000.00	134.934	264.423	179.510	-1318.400	84.914	-1582.824	-1387.093	-1100.520	57.485

References

Phase	H / S	C _p
SOL	Nb1/e	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	98.576	325.876	325.876	–1436.158	0.000	–1533.318	–1436.158	–1373.540	240.638
	300.00	98.831	326.486	325.878	–1435.975	0.183	–1533.921	–1436.166	–1373.151	239.087
	400.00	110.006	356.571	329.903	–1425.491	10.667	–1568.119	–1436.282	–1352.112	176.568
	500.00	116.882	381.919	337.840	–1414.118	22.040	–1605.078	–1435.979	–1331.099	139.059
	600.00	121.190	403.639	347.041	–1402.199	33.959	–1644.383	–1435.464	–1310.169	114.060
	700.00	124.022	422.548	356.507	–1389.929	46.229	–1685.713	–1434.846	–1289.334	96.211
	800.00	125.969	439.243	365.826	–1377.424	58.734	–1728.819	–1434.189	–1268.592	82.831
	900.00	127.360	454.165	374.827	–1364.754	71.404	–1773.502	–1433.543	–1247.931	72.428
	1000.00	128.385	467.639	383.445	–1351.964	84.194	–1819.603	–1432.952	–1227.340	64.110
	1100.00	129.160	479.914	391.666	–1339.085	97.073	–1866.990	–1432.441	–1206.804	57.306
	1200.00	129.761	491.179	399.496	–1326.138	110.020	–1915.553	–1432.025	–1186.311	51.639
	1300.00	130.234	501.585	406.953	–1313.137	123.021	–1965.197	–1431.718	–1165.848	46.844
	1400.00	130.613	511.251	414.062	–1300.094	136.064	–2015.845	–1431.532	–1145.405	42.736
	1500.00	130.920	520.273	420.845	–1287.017	149.141	–2067.426	–1431.478	–1124.970	39.175
	1600.00	131.173	528.730	427.327	–1273.912	162.246	–2119.881	–1431.567	–1104.534	36.059
	1700.00	131.383	536.689	433.528	–1260.784	175.374	–2173.156	–1431.808	–1084.087	33.310
	1800.00	131.559	544.204	439.470	–1247.636	188.522	–2227.204	–1432.212	–1063.622	30.866
	1900.00	131.707	551.321	445.171	–1234.473	201.685	–2281.983	–1432.784	–1043.130	28.678
	2000.00	131.834	558.080	450.649	–1221.296	214.862	–2337.456	–1433.534	–1022.604	26.708

References

Phase	H / S	C _p	Remarks
GAS	Pa2	Pa2	Tk1 MPT= 292.65 / NBPT= 321.15

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	74.836	146.440	146.440	–256.061	0.000	–299.722	–256.061	–256.474	44.933
	300.00	74.852	146.903	146.441	–255.923	0.138	–299.993	–256.069	–256.477	44.657
	400.00	75.689	168.551	149.387	–248.396	7.665	–315.816	–272.747	–255.967	33.426
	500.00	76.525	185.530	154.978	–240.785	15.276	–333.550	–315.992	–247.612	25.868
	600.00	77.362	199.557	161.272	–233.090	22.971	–352.824	–314.771	–234.051	20.376
	700.00	78.199	211.545	167.618	–225.312	30.749	–373.394	–313.531	–220.695	16.468
	800.00	79.036	222.041	173.779	–217.451	38.610	–395.084	–312.275	–207.518	13.550
	900.00	79.873	231.399	179.670	–209.505	46.556	–417.764	–311.014	–194.500	11.288
	1000.00	80.709	239.858	185.273	–201.476	54.585	–441.334	–309.771	–181.620	9.487

References

Phase	H / S	C _p
SOL	Tk1/Ku1	e

VI2[g]

VANADIUM DIIODIDE (GAS)

304.750

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	100.416	276.160	276.160	-21.757	0.000	-104.094	-21.757	-60.846	10.660
	300.00	100.532	276.782	276.162	-21.571	0.186	-104.606	-21.718	-61.089	10.637
	400.00	104.600	306.344	280.165	-11.285	10.472	-133.823	-35.637	-73.974	9.660
	500.00	106.483	329.910	287.838	-0.721	21.036	-165.676	-75.928	-79.738	8.330
	600.00	107.506	349.423	296.523	9.983	31.740	-199.671	-71.697	-80.897	7.043
	700.00	108.122	366.045	305.297	20.767	42.524	-235.465	-67.452	-82.766	6.176
	800.00	108.523	380.511	313.814	31.601	53.358	-272.808	-63.224	-85.243	5.566
	900.00	108.797	393.310	321.949	42.467	64.224	-311.511	-59.042	-88.247	5.122
	1000.00	108.993	404.783	329.669	53.357	75.114	-351.426	-54.938	-91.713	4.791
	1100.00	109.138	415.179	336.978	64.264	86.021	-392.432	-50.927	-95.585	4.539
	1200.00	109.249	424.680	343.896	75.184	96.941	-434.432	-47.020	-99.818	4.345
	1300.00	109.335	433.428	350.451	86.113	107.870	-477.343	-43.225	-104.373	4.194
	1400.00	109.403	441.533	356.671	97.050	118.807	-521.096	-39.552	-109.215	4.075
	1500.00	109.458	449.083	362.583	107.993	129.750	-565.631	-36.010	-114.316	3.981
	1600.00	109.503	456.149	368.212	118.942	140.699	-610.897	-32.607	-119.648	3.906
	1700.00	109.540	462.789	373.582	129.894	151.651	-656.847	-29.352	-125.188	3.847
	1800.00	109.572	469.051	378.714	140.849	162.606	-703.442	-26.254	-130.916	3.799
	1900.00	109.598	474.976	383.626	151.808	173.565	-750.646	-23.319	-136.811	3.761
	2000.00	109.621	480.598	388.335	162.769	184.526	-798.427	-20.553	-142.857	3.731

References

Phase	H / S	C _p
GAS	Tk1,e	e

VI3

VANADIUM TRIIODIDE

431.655

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	99.731	202.924	202.924	-272.378	0.000	-332.880	-272.378	-272.318	47.709
	300.00	99.747	203.541	202.926	-272.193	0.185	-333.256	-272.391	-272.318	47.415
	400.00	100.583	232.351	206.848	-262.177	10.201	-355.117	-297.399	-271.325	35.431
	500.00	101.420	254.885	214.283	-252.077	20.301	-379.519	-362.250	-258.570	27.013
	600.00	102.257	273.450	222.642	-241.893	30.485	-405.963	-360.415	-238.006	20.720

References

Phase	H / S	C _p
SOL	Tk1/Ku1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	28.848	26.711	26.711	–132.214	0.000	–140.178	–132.214	–118.276	20.721
	300.00	28.944	26.889	26.711	–132.161	0.053	–140.227	–132.219	–118.189	20.579
	400.00	32.709	35.786	27.899	–129.059	3.155	–143.373	–132.362	–113.484	14.819
	500.00	35.064	43.353	30.252	–125.664	6.550	–147.340	–132.312	–108.767	11.363
	600.00	36.864	49.910	32.994	–122.064	10.150	–152.011	–132.128	–104.074	9.060
	700.00	38.402	55.711	35.833	–118.299	13.915	–157.297	–131.846	–99.419	7.419
	800.00	39.800	60.931	38.649	–114.388	17.826	–163.133	–131.492	–94.810	6.190
	900.00	41.117	65.696	41.393	–110.342	21.872	–169.468	–131.088	–90.248	5.238
	1000.00	42.384	70.094	44.046	–106.167	26.047	–176.260	–130.665	–85.733	4.478
	1100.00	43.617	74.191	46.603	–101.866	30.348	–183.477	–130.233	–81.261	3.859
	1200.00	44.828	78.039	49.064	–97.444	34.770	–191.090	–129.800	–76.828	3.344
	1300.00	46.023	81.674	51.433	–92.901	39.313	–199.078	–129.373	–72.431	2.910
	1400.00	47.207	85.128	53.718	–88.240	43.974	–207.419	–128.960	–68.067	2.540
	1500.00	48.382	88.425	55.923	–83.460	48.754	–216.098	–128.568	–63.731	2.219
	1600.00	49.551	91.585	58.053	–78.564	53.650	–225.100	–128.204	–59.421	1.940
	1700.00	50.715	94.624	60.116	–73.550	58.664	–234.411	–127.876	–55.132	1.694
	1800.00	51.875	97.556	62.115	–68.421	63.793	–244.021	–127.591	–50.861	1.476
	1900.00	53.032	100.391	64.055	–63.175	69.039	–253.919	–127.355	–46.605	1.281
	2000.00	54.186	103.141	65.941	–57.814	74.400	–264.096	–127.174	–42.360	1.106

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 NDPT= 2875.

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	38.022	37.263	37.263	-217.150	0.000	-228.260	-217.150	-191.076	33.476
	300.00	38.159	37.498	37.263	-217.080	0.070	-228.329	-217.153	-190.914	33.241
	400.00	43.294	49.266	38.833	-212.977	4.173	-232.683	-217.075	-182.169	23.789
	500.00	46.188	59.261	41.945	-208.492	8.658	-238.123	-216.721	-173.480	18.123
	600.00	48.209	67.869	45.565	-203.768	13.382	-244.489	-216.211	-164.877	14.354
	700.00	49.819	75.425	49.302	-198.864	18.286	-251.662	-215.604	-156.368	11.668
	800.00	51.212	82.170	52.997	-193.811	23.339	-259.547	-214.939	-147.951	9.660
	900.00	52.478	88.276	56.583	-188.626	28.524	-268.074	-214.247	-139.619	8.103
	1000.00	53.666	93.868	60.036	-183.318	33.832	-277.186	-213.558	-131.364	6.862
	1100.00	54.804	99.036	63.349	-177.894	39.256	-286.834	-212.884	-123.178	5.849
	1200.00	55.907	103.852	66.526	-172.358	44.792	-296.981	-212.233	-115.051	5.008
	1300.00	56.985	108.370	69.573	-166.714	50.436	-307.594	-211.613	-106.978	4.298
	1400.00	58.046	112.632	72.498	-160.962	56.188	-318.647	-211.028	-98.952	3.692
	1500.00	59.094	116.672	75.309	-155.105	62.045	-330.113	-210.486	-90.965	3.168
	1600.00	60.132	120.519	78.015	-149.143	68.007	-341.975	-209.993	-83.014	2.710
	1700.00	61.162	124.196	80.625	-143.079	74.071	-354.212	-209.557	-75.091	2.307
	1800.00	62.062	127.717	83.144	-136.918	80.232	-366.809	-209.189	-67.192	1.950
	1900.00	62.985	131.097	85.579	-130.666	86.484	-379.750	-208.901	-59.312	1.631
	2000.00	63.916	134.352	87.937	-124.321	92.829	-393.024	-208.696	-51.444	1.344
	2100.00	64.842	137.493	90.222	-117.883	99.267	-406.617	-208.578	-43.585	1.084
	2200.00	65.758	140.530	92.440	-111.353	105.797	-420.519	-229.334	-35.490	0.843
	2300.00	66.660	143.473	94.596	-104.731	112.419	-434.720	-228.714	-26.692	0.606
	2400.00	67.547	146.329	96.692	-98.021	119.129	-449.211	-228.010	-17.923	0.390
	2500.00	68.418	149.104	98.733	-91.223	125.927	-463.983	-227.224	-9.185	0.192
	2600.00	69.273	151.804	100.723	-84.338	132.812	-479.029	-226.356	-0.481	0.010
	2619.00	69.433	152.309	101.095	-83.020	134.130	-481.918	-226.183	1.169	-0.023

References

Phase	H / S	C _p	Remarks
SOL	Nb1	Ja1	Ja1 NDPT= 2619.

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [– –]
SOL	298.15	45.512	38.995	38.995	–431.789	0.000	–443.415	–431.789	–404.213	70.816
	300.00	45.637	39.277	38.996	–431.705	0.084	–443.488	–431.778	–404.042	70.350
	400.00	49.571	53.039	40.846	–426.912	4.877	–448.127	–431.037	–394.902	51.569
	500.00	51.674	64.337	44.448	–421.845	9.944	–454.013	–430.161	–385.968	40.322
	600.00	53.519	73.923	48.582	–416.584	15.205	–460.938	–429.202	–377.219	32.840
	700.00	55.327	82.309	52.813	–411.142	20.647	–468.758	–428.163	–368.636	27.508
	800.00	57.102	89.813	56.977	–405.520	26.269	–477.370	–427.043	–360.207	23.519
	900.00	58.820	96.639	61.010	–399.723	32.066	–486.698	–425.853	–351.924	20.425
	1000.00	60.454	102.921	64.891	–393.759	38.030	–496.680	–424.618	–343.775	17.957
	1100.00	62.085	108.760	68.617	–387.631	44.158	–507.268	–423.347	–335.752	15.944
	1200.00	63.677	114.231	72.192	–381.343	50.446	–518.420	–422.044	–327.846	14.271
	1300.00	65.244	119.390	75.626	–374.897	56.892	–530.103	–420.716	–320.050	12.860
	1400.00	66.792	124.282	78.929	–368.295	63.494	–542.289	–419.371	–312.357	11.654
	1500.00	68.324	128.942	82.109	–361.539	70.250	–554.952	–418.017	–304.760	10.613
	1600.00	69.842	133.400	85.176	–354.630	77.159	–568.071	–416.661	–297.254	9.704
	1700.00	71.350	137.680	88.139	–347.571	84.218	–581.626	–415.313	–289.833	8.905
	1800.00	72.849	141.800	91.007	–340.361	91.428	–595.601	–413.980	–282.490	8.198
	1900.00	74.340	145.779	93.786	–333.001	98.788	–609.981	–412.669	–275.221	7.566
	2000.00	75.826	149.630	96.482	–325.493	106.296	–624.753	–411.388	–268.020	7.000
	2063.00	76.759	151.996	98.141	–320.686	111.103	–634.254	–410.598	–263.516	6.672
LIQ			26.365		54.392					
	2063.00	62.760	178.362	98.141	–266.294	165.495	–634.254	–356.206	–263.516	6.672
	2100.00	62.760	179.477	99.565	–263.972	167.817	–640.874	–356.277	–261.853	6.513
	2200.00	62.760	182.397	103.264	–257.696	174.093	–658.969	–377.382	–257.110	6.105
	2300.00	62.760	185.187	106.765	–251.420	180.369	–677.350	–377.205	–251.647	5.715
	2400.00	62.760	187.858	110.089	–245.144	186.645	–696.003	–377.040	–246.192	5.358
	2500.00	62.760	190.420	113.251	–238.868	192.921	–714.917	–376.885	–240.743	5.030
	2600.00	62.760	192.881	116.267	–232.592	199.197	–734.083	–376.741	–235.300	4.727
	2700.00	62.760	195.250	119.149	–226.316	205.473	–753.491	–376.608	–229.863	4.447
	2800.00	62.760	197.532	121.908	–220.040	211.749	–773.130	–376.485	–224.430	4.187
	2900.00	62.760	199.735	124.554	–213.764	218.025	–792.994	–376.371	–219.002	3.945
	3000.00	62.760	201.862	127.095	–207.488	224.301	–813.075	–376.268	–213.577	3.719

References

Phase	H / S	C _p
SOL	Ja1,Nb1	Ja1
LIQ	Ja1	Ja1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]		[—————]		[————— kJ / mol —————]				[-]
GAS	298.15	30.702	230.899	230.899	127.612	0.000	58.769	127.612	97.972	-17.164
	300.00	30.725	231.089	230.899	127.669	0.057	58.342	127.596	97.788	-17.026
	400.00	32.246	240.133	232.122	130.816	3.204	34.763	126.691	87.988	-11.490
	500.00	33.535	247.474	234.481	134.109	6.497	10.372	125.792	78.416	-8.192
	600.00	34.465	253.675	237.176	137.511	9.899	-14.694	124.893	69.026	-6.009
	700.00	35.141	259.041	239.925	140.993	13.381	-40.336	123.972	59.787	-4.461
	800.00	35.646	263.768	242.616	144.534	16.922	-66.481	123.011	50.682	-3.309
	900.00	36.034	267.990	245.205	148.118	20.506	-93.073	121.988	41.702	-2.420
	1000.00	36.337	271.803	247.677	151.738	24.126	-120.065	120.878	32.840	-1.715
	1100.00	36.578	275.278	250.031	155.384	27.772	-147.422	119.668	24.094	-1.144
	1200.00	36.771	278.469	252.269	159.052	31.440	-175.111	118.350	15.462	-0.673
	1300.00	36.924	281.419	254.400	162.737	35.125	-203.108	116.917	6.946	-0.279
	1400.00	37.044	284.160	256.429	166.435	38.823	-231.388	115.359	-1.456	0.054
	1500.00	37.197	286.721	258.364	170.148	42.536	-259.934	113.670	-9.742	0.339
	1600.00	37.305	289.125	260.212	173.873	46.261	-288.727	111.843	-17.910	0.585
	1700.00	37.397	291.390	261.980	177.608	49.996	-317.754	109.866	-25.960	0.798
	1800.00	37.487	293.530	263.674	181.353	53.741	-347.001	107.733	-33.889	0.983
	1900.00	37.583	295.559	265.299	185.106	57.494	-376.456	105.438	-41.695	1.146
	2000.00	37.691	297.489	266.861	188.870	61.258	-406.109	102.974	-49.376	1.290
	2100.00	37.813	299.331	268.363	192.645	65.033	-435.951	100.340	-56.930	1.416
	2200.00	37.950	301.093	269.811	196.433	68.821	-465.973	76.747	-64.114	1.522
	2300.00	38.100	302.784	271.208	200.235	72.623	-496.167	74.450	-70.465	1.600
	2400.00	38.265	304.409	272.558	204.053	76.441	-526.528	72.158	-76.717	1.670
	2500.00	38.443	305.974	273.864	207.889	80.277	-557.047	69.872	-82.873	1.732
	2600.00	38.634	307.486	275.128	211.742	84.130	-587.721	67.593	-88.938	1.787
	2700.00	38.836	308.948	276.354	215.616	88.004	-618.543	65.324	-94.915	1.836
	2800.00	39.048	310.364	277.543	219.510	91.898	-649.509	63.065	-100.808	1.881
	2900.00	39.270	311.738	278.699	223.426	95.814	-680.614	60.818	-106.621	1.920
	3000.00	39.501	313.073	279.822	227.364	99.752	-711.855	58.584	-112.357	1.956

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [————— kJ / mol —————]	H–H298	G kJ / mol	ΔH _f	ΔG _f	log K _i [–]
GAS	298.15	43.910	265.249	265.250	–232.630	0.000	–311.714	–232.630	–241.930	42.385
	300.00	43.979	265.521	265.250	–232.549	0.081	–312.205	–232.649	–241.987	42.134
	400.00	47.621	278.688	267.021	–227.963	4.667	–339.438	–233.601	–244.952	31.987
	500.00	50.317	289.622	270.478	–223.058	9.572	–367.869	–234.416	–247.693	25.876
	600.00	52.196	298.972	274.467	–217.927	14.703	–397.310	–235.167	–250.278	21.789
	700.00	53.528	307.124	278.563	–212.637	19.993	–427.624	–235.907	–252.738	18.860
	800.00	54.488	314.338	282.592	–207.234	25.396	–458.704	–236.674	–255.090	16.656
	900.00	55.181	320.798	286.485	–201.748	30.882	–490.466	–237.499	–257.344	14.936
	1000.00	55.713	326.640	290.213	–196.203	36.427	–522.843	–238.414	–259.500	13.555
	1100.00	56.124	331.970	293.770	–190.610	42.020	–555.777	–239.432	–261.561	12.420
	1200.00	56.439	336.867	297.160	–184.981	47.649	–589.222	–240.563	–263.523	11.471
	1300.00	56.685	341.395	300.391	–179.325	53.305	–623.138	–241.816	–265.387	10.663
	1400.00	56.881	345.603	303.472	–173.646	58.984	–657.491	–243.201	–267.149	9.967
	1500.00	57.041	349.533	306.413	–167.950	64.680	–692.250	–244.727	–268.807	9.361
	1600.00	57.173	353.219	309.225	–162.239	70.391	–727.389	–246.402	–270.358	8.826
	1700.00	57.283	356.689	311.916	–156.516	76.114	–762.886	–248.237	–271.800	8.351
	1800.00	57.377	359.965	314.495	–150.783	81.847	–798.721	–250.239	–273.129	7.926
	1900.00	57.457	363.070	316.970	–145.041	87.589	–834.874	–252.416	–274.343	7.542
	2000.00	57.526	366.019	319.350	–139.292	93.338	–871.329	–254.775	–275.436	7.194
	2100.00	57.587	368.827	321.639	–133.536	99.094	–908.073	–257.321	–276.408	6.875
	2200.00	57.640	371.507	323.846	–127.775	104.855	–945.091	–280.845	–277.013	6.577
	2300.00	57.687	374.071	325.974	–122.008	110.622	–982.370	–283.093	–276.789	6.286
	2400.00	57.730	376.527	328.030	–116.237	116.393	–1019.901	–285.359	–276.466	6.017
	2500.00	57.768	378.884	330.017	–110.462	122.168	–1057.672	–287.643	–276.049	5.768
	2600.00	57.802	381.150	331.940	–104.684	127.946	–1095.675	–289.944	–275.540	5.536
	2700.00	57.834	383.333	333.804	–98.902	133.728	–1133.900	–292.264	–274.942	5.319
	2800.00	57.862	385.436	335.610	–93.117	139.513	–1172.339	–294.601	–274.258	5.116
	2900.00	57.889	387.467	337.364	–87.330	145.300	–1210.985	–296.955	–273.490	4.926
	3000.00	57.913	389.430	339.067	–81.539	151.091	–1249.830	–299.326	–272.640	4.747

References

Phase	H / S	C _p
GAS	Ja1	Ja1

V2O3

DIVANADIUM TRIOXIDE

149.881

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [————— kJ / mol —————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	104.952	98.073	98.073	-1218.799	0.000	-1248.039	-1218.799	-1139.053	199.557
	300.00	105.273	98.723	98.075	-1218.605	0.194	-1248.222	-1218.778	-1138.558	198.241
	400.00	117.545	130.899	102.378	-1207.391	11.408	-1259.750	-1217.154	-1112.039	145.217
	500.00	123.735	157.865	110.856	-1195.295	23.504	-1274.227	-1214.969	-1086.006	113.454
	600.00	127.354	180.768	120.649	-1182.728	36.071	-1291.188	-1212.585	-1060.436	92.319
	700.00	130.053	200.607	130.686	-1169.854	48.945	-1310.279	-1210.145	-1035.271	77.253
	800.00	132.642	218.141	140.542	-1156.720	62.079	-1331.233	-1207.684	-1010.456	65.976
	900.00	135.251	233.913	150.055	-1143.327	75.472	-1353.849	-1205.207	-985.952	57.223
	1000.00	137.961	248.303	159.171	-1129.667	89.132	-1377.970	-1202.738	-961.722	50.235
	1100.00	140.784	261.583	167.885	-1115.731	103.068	-1403.472	-1200.268	-937.740	44.530
	1200.00	143.715	273.958	176.214	-1101.506	117.293	-1430.256	-1197.789	-913.983	39.785
	1300.00	146.738	285.580	184.185	-1086.985	131.814	-1458.239	-1195.296	-890.434	35.778
	1400.00	149.838	296.568	191.823	-1072.156	146.643	-1487.351	-1192.788	-867.077	32.351
	1500.00	153.004	307.013	199.157	-1057.015	161.784	-1517.534	-1190.270	-843.900	29.387
	1600.00	156.222	316.990	206.212	-1041.554	177.245	-1548.738	-1187.748	-820.891	26.799
	1700.00	159.485	326.559	213.012	-1025.769	193.030	-1580.919	-1185.232	-798.039	24.521
	1800.00	162.785	335.768	219.577	-1009.655	209.144	-1614.038	-1182.730	-775.335	22.500
	1900.00	166.115	344.658	225.928	-993.211	225.588	-1648.062	-1180.254	-752.770	20.695
	2000.00	169.470	353.264	232.081	-976.432	242.367	-1682.960	-1177.810	-730.334	19.074
	2100.00	172.848	361.614	238.051	-959.316	259.483	-1718.706	-1175.406	-708.020	17.611
	2200.00	176.243	369.734	243.853	-941.862	276.937	-1755.275	-1214.618	-685.339	16.272
	2300.00	179.655	377.643	249.499	-924.067	294.732	-1792.646	-1210.937	-661.362	15.020
	2340.00	181.023	380.752	251.716	-916.853	301.946	-1807.814	-1209.378	-651.818	14.550
LIQ			50.065		117.152					
	2340.00	156.900	430.817	251.716	-799.701	419.098	-1807.814	-1092.226	-651.818	14.550
	2400.00	156.900	434.790	256.243	-790.287	428.512	-1833.783	-1091.304	-640.537	13.941
	2500.00	156.900	441.195	263.514	-774.597	444.202	-1877.584	-1089.794	-621.786	12.992
	2600.00	156.900	447.348	270.467	-758.907	459.892	-1922.013	-1088.317	-603.095	12.116
	2700.00	156.900	453.270	277.128	-743.217	475.582	-1967.046	-1086.871	-584.461	11.307
	2800.00	156.900	458.976	283.522	-727.527	491.272	-2012.660	-1085.456	-565.879	10.557
	2900.00	156.900	464.482	289.667	-711.837	506.962	-2058.834	-1084.070	-547.347	9.859
	3000.00	156.900	469.801	295.584	-696.147	522.652	-2105.550	-1082.714	-528.862	9.208

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	TPT= 168.8, L= 1.623 kJ
LIQ	Ja1	Ja1	

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
SOL–1	298.15	115.399	103.512	103.512	–1427.162	0.000	–1458.024	–1427.162	–1318.455	230.988
	300.00	115.788	104.227	103.514	–1426.948	0.214	–1458.216	–1427.149	–1317.781	229.446
	340.00	124.201	119.235	104.489	–1422.148	5.014	–1462.688	–1426.731	–1303.222	200.216
SOL–2			26.459		8.996					
	340.00	127.518	145.694	104.489	–1413.152	14.010	–1462.688	–1417.735	–1303.222	200.216
	400.00	135.276	167.076	112.301	–1405.252	21.910	–1472.082	–1416.528	–1283.110	167.557
	500.00	143.290	198.201	126.455	–1391.289	35.873	–1490.389	–1414.005	–1250.038	130.591
	600.00	148.420	224.808	140.684	–1376.688	50.474	–1511.572	–1411.168	–1217.507	105.993
	700.00	152.187	247.982	154.393	–1361.649	65.513	–1535.237	–1408.190	–1185.465	88.460
	800.00	155.417	268.522	167.399	–1346.264	80.898	–1561.081	–1405.146	–1153.854	75.339
	900.00	158.186	286.990	179.678	–1330.581	96.581	–1588.872	–1402.082	–1122.627	65.156
	1000.00	160.680	303.788	191.262	–1314.636	112.526	–1618.424	–1399.058	–1091.739	57.027
	1100.00	163.000	319.212	202.202	–1298.451	128.711	–1649.584	–1396.094	–1061.151	50.390
	1200.00	165.205	333.490	212.555	–1282.040	145.122	–1682.228	–1393.203	–1030.830	44.871
	1300.00	167.330	346.798	222.375	–1265.412	161.750	–1716.250	–1390.396	–1000.746	40.210
	1400.00	169.398	359.275	231.713	–1248.576	178.586	–1751.560	–1387.686	–970.876	36.224
	1500.00	171.426	371.031	240.613	–1231.534	195.628	–1788.081	–1385.088	–941.195	32.775
	1600.00	173.422	382.159	249.115	–1214.291	212.871	–1825.745	–1382.618	–911.683	29.763
	1700.00	175.395	392.732	257.254	–1196.850	230.312	–1864.494	–1380.292	–882.322	27.110
	1800.00	177.350	402.812	265.063	–1179.213	247.949	–1904.275	–1378.125	–853.093	24.756
	1818.00	177.700	404.579	266.436	–1176.018	251.144	–1911.542	–1377.753	–847.844	24.360
LIQ			61.644		112.068					
	1818.00	213.384	466.222	266.436	–1063.950	363.212	–1911.542	–1265.685	–847.844	24.360
	1900.00	213.384	475.636	275.263	–1046.452	380.710	–1950.161	–1261.201	–829.099	22.794
	2000.00	213.384	486.581	285.557	–1025.114	402.048	–1998.276	–1256.079	–806.491	21.063
	2100.00	213.384	496.992	295.380	–1003.775	423.387	–2047.459	–1251.346	–784.129	19.504
	2200.00	213.384	506.919	304.771	–982.437	444.725	–2097.659	–1288.577	–761.504	18.080
	2300.00	213.384	516.404	313.768	–961.098	466.064	–2148.828	–1283.268	–737.666	16.753
	2400.00	213.384	525.486	322.402	–939.760	487.402	–2200.926	–1278.004	–714.057	15.541
	2500.00	213.384	534.197	330.701	–918.422	508.740	–2253.913	–1272.783	–690.666	14.431

References

Phase	H / S	C _p
SOL–1	Ja1	Ja1
SOL–2	Ja1	Ja1
LIQ	Ja1	Ja1

V2O5

DIVANADIUM PENTAOXIDE

181.880

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	132.686	130.541	130.541	-1550.590	0.000	-1589.511	-1550.590	-1419.359	248.666
	300.00	133.124	131.363	130.543	-1550.344	0.246	-1589.753	-1550.572	-1418.545	246.991
	400.00	150.950	172.336	136.009	-1536.059	14.531	-1604.993	-1548.848	-1374.759	179.525
	500.00	161.754	207.274	146.858	-1520.382	30.208	-1624.019	-1546.140	-1331.536	139.105
	600.00	168.314	237.400	159.497	-1503.848	46.742	-1646.288	-1542.950	-1288.910	112.210
	700.00	173.233	263.730	172.546	-1486.761	63.829	-1671.372	-1539.551	-1246.836	93.040
	800.00	177.252	287.132	185.434	-1469.231	81.359	-1698.937	-1536.031	-1205.259	78.695
	900.00	180.748	308.215	197.924	-1451.328	99.262	-1728.722	-1532.449	-1164.128	67.564
	943.00	182.144	316.684	203.148	-1443.525	107.065	-1742.158	-1530.907	-1146.566	63.511
LIQ			68.417		64.517					
	943.00	190.790	385.100	203.148	-1379.008	171.582	-1742.158	-1466.390	-1146.566	63.511
	1000.00	190.790	396.298	213.841	-1368.133	182.457	-1764.431	-1463.907	-1127.309	58.885
	1100.00	190.790	414.482	231.268	-1349.054	201.536	-1804.985	-1459.804	-1093.850	51.943
	1200.00	190.790	431.083	247.237	-1329.975	220.615	-1847.275	-1456.019	-1060.751	46.173
	1300.00	190.790	446.354	261.975	-1310.896	239.694	-1891.157	-1452.552	-1027.955	41.304
	1400.00	190.790	460.493	275.656	-1291.817	258.773	-1936.508	-1449.406	-995.414	37.139
	1500.00	190.790	473.657	288.422	-1272.738	277.852	-1983.223	-1446.592	-963.086	33.538
	1600.00	190.790	485.970	300.388	-1253.659	296.931	-2031.211	-1444.119	-930.935	30.392
	1700.00	190.790	497.537	311.648	-1234.580	316.010	-2080.392	-1442.001	-898.927	27.621
	1800.00	190.790	508.442	322.281	-1215.501	335.089	-2130.696	-1440.249	-867.034	25.161
	1900.00	190.790	518.757	332.353	-1196.422	354.168	-2182.061	-1438.878	-835.228	22.962
	2000.00	190.790	528.544	341.920	-1177.343	373.247	-2234.430	-1437.896	-803.484	20.985
	2100.00	190.790	537.852	351.030	-1158.264	392.326	-2287.754	-1437.315	-771.780	19.197
	2200.00	190.790	546.728	359.726	-1139.185	411.405	-2341.986	-1438.710	-739.614	17.561
	2300.00	190.790	555.209	368.042	-1120.106	430.484	-2397.086	-1477.576	-706.044	16.035
	2400.00	190.790	563.329	376.011	-1101.027	449.563	-2453.016	-1476.497	-672.522	14.637
	2500.00	190.790	571.117	383.660	-1081.948	468.642	-2509.741	-1475.472	-639.045	13.352

References

Phase	H / S	C _p	Remarks
SOL	Nb1,Ja1	Ja1	
LIQ	Ja1	Ja1	NDPT= 1963., V2O5 = V2O4 + 1/2 O2

VOCI3

VANADIUM TRICHLORIDE OXIDE

173.299

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
LIQ	298.15	150.624	244.346	244.346	-734.710	0.000	-807.562	-734.710	-668.576	117.132
	300.00	150.624	245.277	244.348	-734.431	0.279	-808.015	-734.599	-668.166	116.338
	400.00	150.624	288.609	250.257	-719.369	15.341	-834.813	-728.789	-646.907	84.477

References

Phase	H / S	C _p	Remarks
LIQ	Nb1	e	Tk1 MPT= 195., L= 9.6 kJ

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
GAS	298.15	89.910	344.290	344.290	-695.590	0.000	-798.240	-695.590	-659.254	115.499
	300.00	90.026	344.846	344.291	-695.424	0.166	-798.877	-695.591	-659.029	114.747
	400.00	94.094	371.386	347.882	-686.188	9.402	-834.743	-695.609	-646.838	84.468
	500.00	95.977	392.608	354.777	-676.674	18.916	-872.978	-695.642	-634.642	66.301
	600.00	97.000	410.205	362.591	-667.021	28.569	-913.144	-695.743	-622.434	54.188
	700.00	97.616	425.208	370.491	-657.288	38.302	-954.933	-695.928	-610.203	45.534
	800.00	98.016	438.271	378.164	-647.505	48.085	-998.122	-696.205	-597.938	39.041
	900.00	98.291	449.832	385.497	-637.689	57.901	-1042.538	-696.585	-585.633	33.989
	1000.00	98.487	460.199	392.458	-627.849	67.741	-1088.048	-697.087	-573.280	29.945

References

Phase	H / S	C _p
GAS	Nb1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
SOL	298.15	24.297	32.660	32.660	0.000	0.000	-9.738	0.000	0.000	0.000
	300.00	24.313	32.811	32.661	0.045	0.045	-9.798	0.000	0.000	0.000
	400.00	24.925	39.898	33.623	2.510	2.510	-13.449	0.000	0.000	0.000
	500.00	25.365	45.508	35.458	5.025	5.025	-17.729	0.000	0.000	0.000
	600.00	25.791	50.170	37.532	7.583	7.583	-22.519	0.000	0.000	0.000
	700.00	26.225	54.179	39.631	10.183	10.183	-27.742	0.000	0.000	0.000
	800.00	26.667	57.709	41.674	12.828	12.828	-33.339	0.000	0.000	0.000
	900.00	27.114	60.876	43.635	15.517	15.517	-39.271	0.000	0.000	0.000
	1000.00	27.564	63.756	45.505	18.251	18.251	-45.505	0.000	0.000	0.000
	1100.00	28.017	66.404	47.286	21.030	21.030	-52.015	0.000	0.000	0.000
	1200.00	28.473	68.862	48.983	23.854	23.854	-58.779	0.000	0.000	0.000
	1300.00	28.931	71.159	50.601	26.725	26.725	-65.782	0.000	0.000	0.000
	1400.00	29.393	73.320	52.148	29.641	29.641	-73.007	0.000	0.000	0.000
	1500.00	29.859	75.363	53.628	32.603	32.603	-80.442	0.000	0.000	0.000
	1600.00	30.331	77.305	55.047	35.613	35.613	-88.076	0.000	0.000	0.000
	1700.00	30.810	79.158	56.412	38.670	38.670	-95.900	0.000	0.000	0.000
	1800.00	31.269	80.932	57.725	41.772	41.772	-103.905	0.000	0.000	0.000
	1900.00	31.800	82.636	58.992	44.925	44.925	-112.084	0.000	0.000	0.000
	2000.00	32.306	84.281	60.215	48.131	48.131	-120.430	0.000	0.000	0.000
	2100.00	32.766	85.868	61.399	51.385	51.385	-128.938	0.000	0.000	0.000
	2200.00	33.194	87.402	62.546	54.683	54.683	-137.602	0.000	0.000	0.000
	2300.00	33.627	88.887	63.660	58.024	58.024	-146.417	0.000	0.000	0.000
	2400.00	34.110	90.328	64.741	61.410	61.410	-155.378	0.000	0.000	0.000
	2500.00	34.696	91.732	65.793	64.849	64.849	-164.481	0.000	0.000	0.000
	2600.00	35.435	93.107	66.817	68.354	68.354	-173.723	0.000	0.000	0.000
	2700.00	36.380	94.461	67.816	71.943	71.943	-183.102	0.000	0.000	0.000
	2800.00	37.580	95.805	68.791	75.639	75.639	-192.615	0.000	0.000	0.000
	2900.00	39.081	97.149	69.746	79.469	79.469	-202.263	0.000	0.000	0.000
	3000.00	40.930	98.504	70.682	83.467	83.467	-212.046	0.000	0.000	0.000
	3100.00	43.166	99.881	71.601	87.668	87.668	-221.965	0.000	0.000	0.000
	3200.00	45.830	101.293	72.507	92.114	92.114	-232.023	0.000	0.000	0.000
	3300.00	48.958	102.750	73.401	96.849	96.849	-242.225	0.000	0.000	0.000
	3400.00	52.585	104.264	74.287	101.922	101.922	-252.575	0.000	0.000	0.000
	3500.00	56.743	105.847	75.166	107.384	107.384	-263.080	0.000	0.000	0.000
	3600.00	61.464	107.510	76.041	113.290	113.290	-273.747	0.000	0.000	0.000
	3680.00	65.664	108.906	76.740	118.372	118.372	-282.403	0.000	0.000	0.000
LIQ			9.619		35.397					
	3680.00	35.564	118.525	76.740	153.769	153.769	-282.403	0.000	0.000	0.000
	3700.00	35.564	118.718	76.966	154.480	154.480	-284.776	0.000	0.000	0.000
	3800.00	35.564	119.666	78.078	158.037	158.037	-296.695	0.000	0.000	0.000
	3900.00	35.564	120.590	79.156	161.593	161.593	-308.708	0.000	0.000	0.000
	4000.00	35.564	121.490	80.203	165.150	165.150	-320.812	0.000	0.000	0.000
	4100.00	35.564	122.369	81.221	168.706	168.706	-333.005	0.000	0.000	0.000
	4200.00	35.564	123.226	82.211	172.262	172.262	-345.285	0.000	0.000	0.000
	4300.00	35.564	124.062	83.174	175.819	175.819	-357.650	0.000	0.000	0.000
	4400.00	35.564	124.880	84.113	179.375	179.375	-370.097	0.000	0.000	0.000
	4500.00	35.564	125.679	85.028	182.932	182.932	-382.625	0.000	0.000	0.000

Phase	T [K]	C _p [————— J / (K mol) —————]	S [(K mol) —————]	–(G–H298)/T [—————]	H [—————]	H–H298 [—————]	G [————— kJ / mol —————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [—]
LIQ	4600.00	35.564	126.461	85.920	186.488	186.488	–395.232	0.000	0.000	0.000
	4700.00	35.564	127.226	86.791	190.044	190.044	–407.917	0.000	0.000	0.000
	4800.00	35.564	127.975	87.641	193.601	193.601	–420.677	0.000	0.000	0.000
	4900.00	35.564	128.708	88.472	197.157	197.157	–433.511	0.000	0.000	0.000
	5000.00	35.564	129.426	89.284	200.714	200.714	–446.418	0.000	0.000	0.000
	5100.00	35.564	130.131	90.078	204.270	204.270	–459.396	0.000	0.000	0.000
	5200.00	35.564	130.821	90.855	207.826	207.826	–472.444	0.000	0.000	0.000
	5300.00	35.564	131.499	91.615	211.383	211.383	–485.560	0.000	0.000	0.000
	5400.00	35.564	132.163	92.360	214.939	214.939	–498.743	0.000	0.000	0.000
	5500.00	35.564	132.816	93.089	218.496	218.496	–511.992	0.000	0.000	0.000
	5600.00	35.564	133.457	93.805	222.052	222.052	–525.306	0.000	0.000	0.000
	5700.00	35.564	134.086	94.506	225.608	225.608	–538.683	0.000	0.000	0.000
	5800.00	35.564	134.705	95.194	229.165	229.165	–552.123	0.000	0.000	0.000
	5900.00	35.564	135.313	95.868	232.721	232.721	–565.624	0.000	0.000	0.000
	5931.00	35.564	135.499	96.075	233.824	233.824	–569.821	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	Hu1 BPT= 5931., L= 806.78 kJ

W[g] TUNGSTEN (GAS) 183.850										
Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	21.304	173.951	173.951	851.026	0.000	799.163	851.026	808.900	-141.716
	300.00	21.348	174.082	173.951	851.065	0.039	798.841	851.020	808.639	-140.797
	400.00	23.169	180.464	174.809	853.288	2.262	781.102	850.778	794.551	-103.758
	500.00	26.319	185.946	176.497	855.750	4.724	762.777	850.726	780.507	-81.539
	600.00	30.366	191.097	178.504	858.582	7.556	743.924	850.999	766.443	-66.725
	700.00	34.374	196.084	180.661	861.822	10.796	724.563	851.638	752.305	-56.138
	800.00	37.738	200.903	182.892	865.435	14.409	704.712	852.607	738.052	-48.190
	900.00	40.096	205.495	185.151	869.336	18.310	684.390	853.819	723.662	-42.000
	1000.00	41.226	209.790	187.403	873.413	22.387	663.623	855.162	709.128	-37.041
	1100.00	41.470	213.738	189.620	877.556	26.530	642.444	856.526	694.459	-32.977
	1200.00	40.946	217.328	191.782	881.681	30.655	620.888	857.827	679.667	-29.585
	1300.00	40.013	220.570	193.874	885.732	34.706	598.990	859.007	664.772	-26.711
	1400.00	38.882	223.495	195.887	889.677	38.651	576.784	860.037	649.791	-24.244
	1500.00	37.684	226.137	197.817	893.506	42.480	554.300	860.903	634.742	-22.104
	1600.00	36.499	228.531	199.663	897.215	46.189	531.565	861.602	619.641	-20.229
	1700.00	35.375	230.710	201.426	900.808	49.782	508.601	862.138	604.501	-18.574
	1800.00	34.343	232.702	203.109	904.293	53.267	485.429	862.521	589.334	-17.102
	1900.00	33.420	234.533	204.716	907.680	56.654	462.066	862.755	574.150	-15.784
	2000.00	32.614	236.227	206.249	910.981	59.955	438.527	862.850	558.957	-14.598
	2100.00	31.927	237.801	207.715	914.207	63.181	414.825	862.822	543.763	-13.525
	2200.00	31.358	239.272	209.116	917.370	66.344	390.971	862.687	528.573	-12.550
	2300.00	30.901	240.656	210.458	920.482	69.456	366.973	862.458	513.390	-11.659
	2400.00	30.551	241.963	211.743	923.554	72.528	342.842	862.144	498.220	-10.843
	2500.00	30.299	243.205	212.977	926.595	75.569	318.583	861.746	483.064	-10.093
	2600.00	30.136	244.390	214.163	929.617	78.591	294.203	861.262	467.926	-9.401
	2700.00	30.051	245.525	215.303	932.625	81.599	269.707	860.682	452.809	-8.760
	2800.00	30.032	246.618	216.402	935.629	84.603	245.099	859.990	437.714	-8.166
	2900.00	30.069	247.672	217.463	938.634	87.608	220.384	859.165	422.647	-7.613
	3000.00	30.150	248.693	218.487	941.644	90.618	195.566	858.178	407.611	-7.097
	3100.00	30.326	249.684	219.477	944.668	93.642	170.647	857.000	392.611	-6.615
	3200.00	30.536	250.650	220.436	947.711	96.685	145.630	855.597	377.653	-6.165
	3300.00	30.785	251.594	221.366	950.777	99.751	120.517	853.927	362.742	-5.742
	3400.00	31.072	252.517	222.269	953.869	102.843	95.312	851.947	347.887	-5.345
	3500.00	31.392	253.422	223.146	956.992	105.966	70.015	849.608	333.094	-4.971
	3600.00	31.739	254.311	223.999	960.148	109.122	44.628	846.859	318.375	-4.619
	3700.00	32.111	255.186	224.831	963.341	112.315	19.153	808.860	303.928	-4.291
	3800.00	32.502	256.047	225.641	966.571	115.545	-6.409	808.534	290.286	-3.990
	3900.00	32.908	256.897	226.431	969.842	118.816	-32.056	808.248	276.652	-3.705
	4000.00	33.326	257.735	227.203	973.153	122.127	-57.788	808.004	263.024	-3.435
	4100.00	33.751	258.563	227.958	976.507	125.481	-83.603	807.801	249.402	-3.177
	4200.00	34.182	259.382	228.697	979.904	128.878	-109.500	807.641	235.785	-2.932
	4300.00	34.614	260.191	229.420	983.344	132.318	-135.479	807.525	222.171	-2.699
	4400.00	35.046	260.992	230.128	986.827	135.801	-161.538	807.451	208.559	-2.476
	4500.00	35.474	261.784	230.823	990.353	139.327	-187.677	807.421	194.948	-2.263
	4600.00	35.897	262.569	231.505	993.921	142.895	-213.895	807.433	181.337	-2.059
	4700.00	36.314	263.345	232.174	997.532	146.506	-240.191	807.487	167.726	-1.864
	4800.00	36.723	264.114	232.831	1001.184	150.158	-266.564	807.583	154.113	-1.677
	4900.00	37.122	264.875	233.477	1004.876	153.850	-293.013	807.719	140.498	-1.498
	5000.00	37.511	265.629	234.113	1008.608	157.582	-319.538	807.894	126.879	-1.326

183.850

TUNGSTEN (GAS) [continued]

W[g]

Phase	T [K]	C_p	S	$-(G-H_{298})/T$	H	H-H ₂₉₈	G	ΔH_f	ΔG_f	log K_f
		[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{J}}{\text{K mol}}$]				[$\frac{\text{kJ}}{\text{mol}}$]			[-]
GAS	5100.00	37.889	266.376	234.738	1012.378	161.352	-346.139	808.108	113.257	-1.160
	5200.00	38.255	267.115	235.354	1016.185	165.159	-372.813	808.359	99.630	-1.001
	5300.00	38.610	267.847	235.960	1020.028	169.002	-399.562	808.646	85.998	-0.848
	5400.00	38.953	268.572	236.557	1023.907	172.881	-426.383	808.968	72.360	-0.700
	5500.00	39.285	269.290	237.146	1027.819	176.793	-453.276	809.323	58.716	-0.558
	5600.00	39.604	270.001	237.726	1031.763	180.737	-480.240	809.711	45.065	-0.420
	5700.00	39.912	270.704	238.299	1035.739	184.713	-507.276	810.131	31.407	-0.288
	5800.00	40.210	271.401	238.863	1039.745	188.719	-534.381	810.581	17.742	-0.160
	5900.00	40.497	272.091	239.421	1043.781	192.755	-561.556	811.060	4.068	-0.036
	6000.00	40.775	272.774	239.971	1047.844	196.818	-588.799	0.000	0.000	0.000

References

Phase	H / S	C_p
GAS	Ja1,Hu1	Hu1

263.754

TUNGSTEN BROMIDE (GAS)

WBr[g]

Phase	T [K]	C_p	S	$-(G-H_{298})/T$	H	H-H ₂₉₈	G	ΔH_f	ΔG_f	log K_f
		[$\frac{\text{J}}{\text{K mol}}$]	[$\frac{\text{J}}{\text{K mol}}$]				[$\frac{\text{kJ}}{\text{mol}}$]			[-]
GAS	298.15	36.033	272.488	272.488	586.178	0.000	504.936	586.178	537.364	-94.144
	300.00	36.049	272.711	272.488	586.245	0.067	504.431	586.130	537.061	-93.511
	400.00	36.683	283.179	273.911	589.885	3.707	476.613	570.064	523.971	-68.424
	500.00	37.013	291.403	276.617	593.571	7.393	447.870	569.389	512.525	-53.543
	600.00	37.214	298.170	279.662	597.283	11.105	418.381	568.684	501.218	-43.635
	700.00	37.362	303.918	282.727	601.012	14.834	388.269	567.945	490.032	-36.567
	800.00	37.494	308.916	285.695	604.755	18.577	357.622	567.169	478.954	-31.272
	900.00	37.626	313.340	288.525	608.511	22.333	326.505	566.358	467.975	-27.161
	1000.00	37.767	317.311	291.209	612.281	26.103	294.969	565.511	457.089	-23.876
	1100.00	37.918	320.918	293.748	616.065	29.887	263.055	564.629	446.289	-21.192
	1200.00	38.082	324.224	296.152	619.865	33.687	230.796	563.715	435.571	-18.960
	1300.00	38.256	327.279	298.430	623.682	37.504	198.219	562.769	424.930	-17.074
	1400.00	38.440	330.121	300.594	627.516	41.338	165.347	561.792	414.364	-15.460
	1500.00	38.629	332.779	302.652	631.370	45.192	132.200	560.784	403.868	-14.064
	1600.00	38.822	335.279	304.614	635.242	49.064	98.796	559.746	393.441	-12.845
	1700.00	39.016	337.638	306.487	639.134	52.956	65.149	558.677	383.080	-11.771
	1800.00	39.206	339.874	308.281	643.045	56.867	31.273	557.579	372.782	-10.818
	1900.00	39.390	341.998	310.000	646.975	60.797	-2.822	556.447	362.546	-9.967
	2000.00	39.564	344.023	311.651	650.923	64.745	-37.124	555.277	352.371	-9.203

References

Phase	H / S	C_p
GAS	Ja1	Ja1

WBr5

TUNGSTEN PENTABROMIDE

583.370

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	155.468	271.960	271.960	-311.708	0.000	-392.793	-311.708	-269.602	47.233
	300.00	155.653	272.922	271.963	-311.420	0.288	-393.297	-311.815	-269.340	46.896
	400.00	165.687	319.075	278.188	-295.353	16.355	-422.983	-384.419	-239.993	31.340
	500.00	175.728	357.125	290.275	-278.283	33.425	-456.845	-379.093	-204.484	21.362
	559.00	181.653	377.051	298.396	-267.740	43.968	-478.511	-375.533	-184.079	17.201
LIQ			30.687		17.154					
	559.00	182.004	407.737	298.396	-250.586	61.122	-478.511	-358.379	-184.079	17.201
	600.00	182.004	420.620	306.313	-243.124	68.584	-495.496	-355.788	-171.388	14.921
	633.00	182.004	430.364	312.528	-237.118	74.590	-509.538	-353.713	-161.302	13.311

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 BPT= 633.0, L= 81.50 kJ

WBr5[g]

TUNGSTEN PENTABROMIDE (GAS)

583.370

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	127.212	461.605	461.605	-199.158	0.000	-336.785	-199.158	-213.594	37.421
	300.00	127.277	462.392	461.607	-198.923	0.235	-337.640	-199.317	-213.684	37.206
	400.00	129.694	499.382	466.634	-186.059	13.099	-385.812	-275.124	-202.821	26.486
	500.00	130.881	528.464	476.196	-173.024	26.134	-437.256	-273.834	-184.895	19.316
	600.00	131.529	552.390	486.960	-159.900	39.258	-491.334	-272.564	-167.226	14.558
	700.00	131.916	572.696	497.794	-146.726	52.432	-547.614	-271.330	-149.768	11.176
	800.00	132.171	590.329	508.283	-133.521	65.637	-605.784	-270.138	-132.484	8.650
	900.00	132.357	605.908	518.281	-120.294	78.864	-665.611	-268.994	-115.347	6.695
	1000.00	132.509	619.861	527.754	-107.051	92.107	-726.912	-267.898	-98.334	5.136
	1100.00	132.648	632.497	536.711	-93.793	105.365	-789.540	-266.852	-81.429	3.867
	1200.00	132.785	644.045	545.181	-80.521	118.637	-853.375	-265.853	-64.617	2.813
	1300.00	132.927	654.679	553.200	-67.236	131.922	-918.318	-264.902	-47.886	1.924
	1400.00	133.079	664.535	560.805	-53.936	145.222	-984.285	-263.997	-31.226	1.165
	1500.00	133.244	673.722	568.030	-40.620	158.538	-1051.203	-263.136	-14.630	0.509
	1600.00	133.423	682.327	574.907	-27.286	171.872	-1119.010	-262.318	1.910	-0.062
	1700.00	133.616	690.422	581.467	-13.935	185.223	-1187.651	-261.543	18.400	-0.565
	1800.00	133.825	698.065	587.734	-0.563	198.595	-1257.079	-260.806	34.846	-1.011
	1900.00	134.048	705.306	593.733	12.831	211.989	-1327.251	-260.111	51.252	-1.409
	2000.00	134.286	712.188	599.485	26.247	225.405	-1398.128	-259.457	67.622	-1.766

References

Phase	H / S	C _p
GAS	Ja1	Ja1

663.274

TUNGSTEN HEXABROMIDE

WBr6

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					
SOL	298.15	181.393	313.800	313.800	-343.088	0.000	-436.647	-343.088	-290.766	50.941
	300.00	181.594	314.923	313.803	-342.752	0.336	-437.229	-343.217	-290.441	50.570
	400.00	192.465	368.653	321.056	-324.049	19.039	-471.510	-430.426	-254.611	33.249
	500.00	203.342	412.768	335.110	-304.259	38.829	-510.643	-424.227	-211.356	22.080
	582.00	212.263	444.308	348.314	-287.219	55.869	-545.807	-418.424	-176.888	15.876

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 subl., MPT= 582. (p= 50 atm)

663.274

TUNGSTEN HEXABROMIDE (GAS)

WBr6[g]

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					
GAS	298.15	151.367	482.525	482.525	-243.090	0.000	-386.955	-243.090	-241.073	42.235
	300.00	151.445	483.461	482.527	-242.810	0.280	-387.848	-243.275	-241.060	41.972
	400.00	154.217	527.463	488.508	-227.508	15.582	-438.493	-333.884	-221.594	28.937
	500.00	155.541	562.034	499.880	-212.013	31.077	-493.030	-331.981	-193.742	20.240
	600.00	156.273	590.463	512.678	-196.419	46.671	-550.697	-330.100	-166.272	14.475
	700.00	156.719	614.589	525.557	-180.768	62.322	-610.980	-328.255	-139.114	10.381
	800.00	157.011	635.536	538.024	-165.080	78.010	-673.509	-326.455	-112.217	7.327
	900.00	157.212	654.041	549.906	-149.368	93.722	-738.006	-324.704	-85.543	4.965
	1000.00	157.357	670.613	561.163	-133.640	109.450	-804.253	-323.006	-59.061	3.085
	1100.00	157.464	685.616	571.806	-117.898	125.192	-872.076	-321.363	-32.746	1.555
	1200.00	157.545	699.321	581.869	-102.148	140.942	-941.333	-319.775	-6.579	0.286
	1300.00	157.608	711.934	591.395	-86.390	156.700	-1011.904	-318.244	19.458	-0.782
	1400.00	157.658	723.616	600.428	-70.627	172.463	-1083.689	-316.772	45.380	-1.693
	1500.00	157.698	734.495	609.007	-54.859	188.231	-1156.601	-315.358	71.198	-2.479
	1600.00	157.731	744.673	617.172	-39.087	204.003	-1230.564	-314.003	96.924	-3.164
	1700.00	157.758	754.237	624.956	-23.313	219.777	-1305.515	-312.709	122.567	-3.766
	1800.00	157.780	763.254	632.391	-7.536	235.554	-1381.394	-311.473	148.135	-4.299
	1900.00	157.799	771.786	639.505	8.243	251.333	-1458.149	-310.301	173.637	-4.774
	2000.00	157.815	779.880	646.323	24.024	267.114	-1535.736	-309.195	199.078	-5.199
	2100.00	157.828	787.580	652.868	39.806	282.896	-1614.112	-308.151	224.466	-5.583
	2200.00	157.840	794.923	659.159	55.590	298.680	-1693.240	-307.165	249.806	-5.931
	2300.00	157.850	801.939	665.216	71.374	314.464	-1773.086	-306.235	275.101	-6.248
	2400.00	157.858	808.657	671.053	87.160	330.250	-1853.618	-305.363	300.358	-6.537
	2500.00	157.866	815.102	676.687	102.946	346.036	-1934.808	-304.559	325.580	-6.803

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]					[————— kJ / mol —————]			[-]
SOL	298.15	35.378	32.384	32.384	-40.166	0.000	-49.821	-40.166	-38.372	6.723
	300.00	35.521	32.603	32.385	-40.100	0.066	-49.881	-40.161	-38.361	6.679
	400.00	40.843	43.645	33.854	-36.250	3.916	-53.708	-39.813	-37.810	4.937
	500.00	43.711	53.093	36.782	-32.010	8.156	-58.557	-39.419	-37.355	3.902
	600.00	45.601	61.240	40.195	-27.539	12.627	-64.283	-39.086	-36.975	3.219
	700.00	47.019	68.380	43.722	-22.905	17.261	-70.771	-38.831	-36.644	2.734
	800.00	48.175	74.736	47.209	-18.144	22.022	-77.933	-38.638	-36.346	2.373
	900.00	49.170	80.469	50.591	-13.276	26.890	-85.698	-38.492	-36.068	2.093
	1000.00	50.059	85.696	53.844	-8.314	31.852	-94.010	-38.383	-35.805	1.870
	1100.00	50.870	90.506	56.961	-3.267	36.899	-102.823	-38.304	-35.551	1.688
	1200.00	51.621	94.965	59.944	1.858	42.024	-112.099	-38.249	-35.304	1.537
	1300.00	52.325	99.125	62.800	7.056	47.222	-121.806	-38.213	-35.060	1.409
	1400.00	52.989	103.027	65.536	12.322	52.488	-131.916	-38.192	-34.818	1.299
	1500.00	53.618	106.705	68.159	17.653	57.819	-142.404	-38.183	-34.578	1.204
	1600.00	54.215	110.184	70.678	23.045	63.211	-153.250	-38.185	-34.337	1.121
	1700.00	54.784	113.488	73.099	28.495	68.661	-164.435	-38.196	-34.096	1.048
	1800.00	55.325	116.635	75.431	34.001	74.167	-175.942	-38.213	-33.855	0.982
	1900.00	55.840	119.640	77.680	39.559	79.725	-187.757	-38.242	-33.612	0.924
	2000.00	56.331	122.517	79.850	45.168	85.334	-199.866	-38.286	-33.367	0.871
	2100.00	56.797	125.277	81.948	50.824	90.990	-212.257	-38.343	-33.120	0.824
	2200.00	57.241	127.929	83.978	56.526	96.692	-224.918	-38.409	-32.870	0.780
	2300.00	57.661	130.483	85.945	62.272	102.438	-237.839	-38.484	-32.616	0.741
	2400.00	58.059	132.946	87.852	68.058	108.224	-251.012	-38.571	-32.359	0.704
	2500.00	58.435	135.323	89.704	73.883	114.049	-264.426	-38.681	-32.098	0.671

References

Phase	H / S	C _p	Remarks
SOL	Hu1,A1	A1	Hu1 MPT= 3049. (peritec.)

379.711

DITUNGSTEN CARBIDE

W2C

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	76.611	56.066	56.066	-26.359	0.000	-43.075	-26.359	-21.888	3.835
	300.00	76.832	56.540	56.067	-26.217	0.142	-43.179	-26.323	-21.860	3.806
	400.00	84.998	79.908	59.198	-18.075	8.284	-50.038	-24.148	-20.691	2.702
	500.00	89.362	99.384	65.343	-9.339	17.020	-59.031	-21.773	-20.100	2.100
	600.00	92.229	115.945	72.432	-0.251	26.108	-69.818	-19.381	-19.990	1.740
	700.00	94.390	130.330	79.698	9.084	35.443	-82.147	-17.025	-20.279	1.513
	800.00	96.174	143.054	86.837	18.614	44.973	-95.829	-14.708	-20.902	1.365
	900.00	97.740	154.474	93.729	28.312	54.671	-110.715	-12.421	-21.814	1.266
	1000.00	99.169	164.847	100.330	38.158	64.517	-126.689	-10.162	-22.979	1.200
	1100.00	100.510	174.362	106.633	48.143	74.502	-143.656	-7.925	-24.369	1.157
	1200.00	101.790	183.163	112.649	58.258	84.617	-161.537	-5.704	-25.962	1.130
	1300.00	103.027	191.359	118.392	68.499	94.858	-180.268	-3.495	-27.740	1.115
	1400.00	104.234	199.039	123.881	78.862	105.221	-199.792	-1.293	-29.688	1.108
	1500.00	105.417	206.271	129.135	89.345	115.704	-220.061	0.906	-31.793	1.107
	1600.00	106.583	213.111	134.171	99.945	126.304	-241.033	3.103	-34.044	1.111
	1700.00	107.736	219.608	139.008	110.661	137.020	-262.672	5.301	-36.433	1.119
	1800.00	108.879	225.798	143.659	121.492	147.851	-284.944	7.507	-38.952	1.130
	1900.00	110.012	231.715	148.139	132.437	158.796	-307.822	9.710	-41.593	1.143
	2000.00	111.140	237.387	152.460	143.494	169.853	-331.279	11.909	-44.350	1.158
	2100.00	112.261	242.837	156.635	154.664	181.023	-355.292	14.112	-47.217	1.174
	2200.00	113.378	248.085	160.673	165.946	192.305	-379.840	16.328	-50.190	1.192
	2300.00	114.492	253.149	164.584	177.340	203.699	-404.903	18.561	-53.263	1.210
	2400.00	115.602	258.045	168.377	188.845	215.204	-430.464	20.806	-56.434	1.228
	2500.00	116.710	262.787	172.059	200.460	226.819	-456.507	23.047	-59.698	1.247
	2600.00	117.815	267.386	175.638	212.187	238.546	-483.017	25.260	-63.052	1.267
	2700.00	118.919	271.853	179.119	224.023	250.382	-509.980	27.408	-66.490	1.286
	2800.00	120.021	276.198	182.509	235.970	262.329	-537.383	29.446	-70.005	1.306
	2900.00	121.121	280.429	185.813	248.027	274.386	-565.216	31.318	-73.590	1.326
	3000.00	122.220	284.553	189.036	260.194	286.553	-593.466	32.959	-77.237	1.345
	3068.00	122.967	287.301	191.183	268.531	294.890	-612.909	33.906	-79.745	1.358

References

Phase	H / S	C _p
SOL	Sh1	Sh1

351.912

TUNGSTEN HEXACARBONYL

W(CO)6

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	241.417	332.210	332.210	-951.860	0.000	-1050.908	-951.860	-847.408	148.462
	300.00	241.881	333.704	332.214	-951.413	0.447	-1051.524	-951.716	-846.760	147.434
	400.00	266.985	406.727	342.001	-925.970	25.890	-1088.661	-943.873	-812.950	106.160

References

Phase	H / S	C _p
SOL	Tk1	Tk1,e

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	208.781	501.350	501.350	-875.040	0.000	-1024.518	-875.040	-821.017	143.839
	300.00	209.467	502.644	501.354	-874.653	0.387	-1025.446	-874.956	-820.682	142.893
	400.00	235.173	566.859	509.935	-852.270	22.770	-1079.014	-870.174	-803.303	104.901
	500.00	249.536	621.001	526.882	-827.981	47.059	-1138.481	-865.562	-787.130	82.231
	600.00	259.434	667.416	546.529	-802.508	72.532	-1202.957	-861.608	-771.827	67.194
	700.00	267.224	708.012	566.758	-776.163	98.877	-1271.771	-858.296	-757.133	56.498
	800.00	273.891	744.139	586.714	-749.100	125.940	-1344.411	-855.433	-742.881	48.505
	900.00	279.904	776.751	606.046	-721.406	153.634	-1420.482	-852.840	-728.970	42.308
	1000.00	285.512	806.535	624.627	-693.132	181.908	-1499.667	-850.402	-715.338	37.365
	1100.00	290.854	833.999	642.429	-664.312	210.728	-1581.711	-848.023	-701.947	33.333
	1200.00	296.016	859.529	659.469	-634.968	240.072	-1666.403	-845.623	-688.773	29.982
	1300.00	301.051	883.423	675.787	-605.113	269.927	-1753.563	-843.137	-675.803	27.154
	1400.00	305.994	905.914	691.429	-574.760	300.280	-1843.040	-840.515	-663.028	24.738
	1500.00	310.868	927.192	706.443	-543.917	331.123	-1934.705	-837.714	-650.447	22.651
	1600.00	315.691	947.409	720.877	-512.588	362.452	-2028.444	-834.700	-638.060	20.831
	1700.00	320.473	966.692	734.774	-480.780	394.260	-2124.156	-831.448	-625.868	19.231
	1800.00	325.224	985.144	748.175	-448.495	426.545	-2221.754	-827.936	-613.875	17.814
	1900.00	329.950	1002.855	761.116	-415.736	459.304	-2321.160	-824.156	-602.085	16.552
	2000.00	334.656	1019.899	773.632	-382.506	492.534	-2422.303	-820.102	-590.500	15.422

References

Phase	H / S	C _p
GAS	Tk1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
GAS	298.15	34.879	262.028	262.028	553.543	0.000	475.419	553.543	518.418	–90.825
	300.00	34.904	262.244	262.028	553.608	0.065	474.934	553.531	518.200	–90.227
	400.00	35.856	272.432	263.411	557.151	3.608	448.179	552.876	506.521	–66.145
	500.00	36.382	280.494	266.049	560.765	7.222	420.518	552.190	495.011	–51.713
	600.00	36.740	287.160	269.028	564.422	10.879	392.126	551.471	483.642	–42.105
	700.00	37.019	292.846	272.035	568.111	14.568	363.119	550.721	472.396	–35.251
	800.00	37.255	297.804	274.952	571.825	18.282	333.581	549.938	461.260	–30.117
	900.00	37.468	302.205	277.741	575.561	22.018	303.576	549.122	450.224	–26.130
	1000.00	37.664	306.163	280.388	579.318	25.775	273.155	548.274	439.281	–22.946
	1100.00	37.851	309.761	282.897	583.093	29.550	242.356	547.394	428.424	–20.344
	1200.00	38.031	313.063	285.276	586.888	33.345	211.212	546.482	417.648	–18.180
	1300.00	38.207	316.114	287.532	590.700	37.157	179.752	545.537	406.950	–16.351
	1400.00	38.379	318.952	289.676	594.529	40.986	147.997	544.560	396.326	–14.787
	1500.00	38.548	321.605	291.717	598.375	44.832	115.967	543.549	385.773	–13.434
	1600.00	38.715	324.098	293.664	602.238	48.695	83.681	542.505	375.289	–12.252
	1700.00	38.881	326.450	295.524	606.118	52.575	51.152	541.426	364.871	–11.211
	1800.00	39.046	328.677	297.304	610.015	56.472	18.395	540.315	354.517	–10.288
	1900.00	39.210	330.793	299.012	613.927	60.384	–14.579	539.166	344.226	–9.463
	2000.00	39.372	332.808	300.652	617.856	64.313	–47.760	537.977	333.997	–8.723
	2100.00	39.535	334.733	302.229	621.802	68.259	–81.138	536.752	323.827	–8.055
	2200.00	39.697	336.576	303.749	625.763	72.220	–114.704	535.495	313.718	–7.449
	2300.00	39.858	338.344	305.215	629.741	76.198	–148.451	534.208	303.665	–6.896
	2400.00	40.019	340.044	306.631	633.735	80.192	–182.371	532.888	293.670	–6.392
	2500.00	40.180	341.681	308.000	637.745	84.202	–216.457	531.526	283.730	–5.928
	2600.00	40.341	343.260	309.326	641.771	88.228	–250.705	530.109	273.846	–5.502
	2700.00	40.501	344.785	310.611	645.813	92.270	–285.108	528.621	264.018	–5.108
	2800.00	40.661	346.261	311.858	649.871	96.328	–319.660	527.036	254.247	–4.743
	2900.00	40.821	347.691	313.069	653.945	100.402	–354.358	525.328	244.534	–4.405
	3000.00	40.981	349.077	314.247	658.035	104.492	–389.197	523.464	234.883	–4.090

References

Phase	H / S	C _p
GAS	Ja1	Ja1

WC12

TUNGSTEN DICHLORIDE

254.755

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298 [————— kJ / mol —————]	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	77.823	130.541	130.541	-257.316	0.000	-296.237	-257.316	-219.977	38.539
	300.00	77.863	131.022	130.542	-257.172	0.144	-296.479	-257.280	-219.745	38.261
	400.00	80.049	153.721	133.622	-249.276	8.040	-310.765	-255.316	-207.529	27.101
	500.00	82.238	171.819	139.511	-241.162	16.154	-327.072	-253.288	-195.815	20.457
	600.00	84.427	187.006	146.194	-232.829	24.487	-345.033	-251.148	-184.519	16.064
	700.00	86.617	200.185	152.986	-224.277	33.039	-364.406	-248.873	-173.592	12.954
	800.00	88.807	211.894	159.631	-215.505	41.811	-385.021	-246.452	-163.001	10.643
	862.00	90.165	218.573	163.633	-209.957	47.359	-398.367	-244.873	-156.593	9.489

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 NDPT= 862.

WC12[g]

TUNGSTEN DICHLORIDE (GAS)

254.755

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298 [————— kJ / mol —————]	G	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	58.389	309.725	309.725	-12.552	0.000	-104.897	-12.552	-28.637	5.017
	300.00	58.411	310.087	309.727	-12.444	0.108	-105.470	-12.552	-28.737	5.003
	400.00	59.346	327.029	312.030	-6.553	5.999	-137.364	-12.593	-34.128	4.457
	500.00	60.021	340.346	316.409	-0.583	11.969	-170.756	-12.709	-39.500	4.126
	600.00	60.593	351.341	321.341	5.448	18.000	-205.357	-12.871	-44.843	3.904
	700.00	61.117	360.721	326.313	11.534	24.086	-240.971	-13.062	-50.157	3.743
	800.00	61.615	368.915	331.137	17.671	30.223	-277.461	-13.275	-55.442	3.620
	900.00	62.099	376.200	335.746	23.857	36.409	-314.724	-13.504	-60.699	3.523
	1000.00	62.573	382.768	340.126	30.090	42.642	-352.678	-13.746	-65.930	3.444
	1100.00	63.040	388.754	344.278	36.371	48.923	-391.258	-13.998	-71.137	3.378
	1200.00	63.504	394.259	348.217	42.698	55.250	-430.412	-14.259	-76.320	3.322
	1300.00	63.965	399.360	351.957	49.072	61.624	-470.096	-14.529	-81.480	3.274
	1400.00	64.424	404.117	355.515	55.491	68.043	-510.273	-14.806	-86.620	3.232
	1500.00	64.881	408.577	358.905	61.956	74.508	-550.910	-15.092	-91.740	3.195
	1600.00	65.337	412.779	362.142	68.467	81.019	-591.980	-15.387	-96.840	3.162
	1700.00	65.792	416.754	365.239	75.024	87.576	-633.458	-15.691	-101.922	3.132
	1800.00	66.246	420.527	368.207	81.626	94.178	-675.324	-16.001	-106.985	3.105
	1900.00	66.700	424.121	371.056	88.273	100.825	-717.558	-16.325	-112.031	3.080
	2000.00	67.153	427.554	373.795	94.966	107.518	-760.143	-16.663	-117.060	3.057
	2100.00	67.606	430.842	376.434	101.704	114.256	-803.064	-17.011	-122.071	3.036
	2200.00	68.059	433.997	378.979	108.487	121.039	-846.307	-17.366	-127.065	3.017
	2273.00	68.389	436.224	380.782	113.467	126.019	-878.070	-17.629	-130.701	3.004

References

Phase	H / S	C _p
GAS	Ja1	Ja1

325.661

TUNGSTEN TETRACHLORIDE

WCl₄

Phase	T [K]	C _p [————— J / (K mol) —————]	S [(K mol)]	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G [————— kJ / mol —————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	129.534	198.322	198.322	-443.086	0.000	-502.216	-443.086	-359.433	62.971
	300.00	129.639	199.123	198.324	-442.846	0.240	-502.583	-443.017	-358.915	62.493
	400.00	135.485	237.214	203.478	-429.592	13.494	-524.477	-439.162	-331.454	43.284
	500.00	141.301	268.075	213.405	-415.751	27.335	-549.788	-434.977	-305.004	31.864
	600.00	146.880	294.335	224.757	-401.339	41.747	-577.940	-430.394	-279.433	24.327
	700.00	152.151	317.377	236.375	-386.385	56.701	-608.549	-425.394	-254.662	19.003
	800.00	157.083	338.019	247.812	-370.920	72.166	-641.336	-419.985	-230.636	15.059

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 NDPT= 771. 3 WCl ₄ = WCl ₂ + 2WCl

325.661

TUNGSTEN TETRACHLORIDE (GAS)

WCl₄[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [(K mol)]	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G [————— kJ / mol —————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	98.813	379.180	379.180	-335.975	0.000	-449.027	-335.975	-306.245	53.653
	300.00	98.921	379.791	379.182	-335.792	0.183	-449.730	-335.963	-306.061	53.290
	400.00	102.742	408.850	383.118	-325.682	10.293	-489.222	-335.252	-296.199	38.680
	500.00	104.536	431.991	390.658	-315.308	20.667	-531.304	-334.535	-286.520	29.932
	600.00	105.531	451.146	399.189	-304.801	31.174	-575.488	-333.856	-276.981	24.113
	700.00	106.149	467.463	407.806	-294.215	41.760	-621.439	-333.224	-267.553	19.965
	800.00	106.566	481.666	416.170	-283.578	52.397	-668.911	-332.642	-258.211	16.859
	900.00	106.867	494.236	424.159	-272.905	63.070	-717.718	-332.110	-248.940	14.448
	1000.00	107.095	505.508	431.740	-262.206	73.769	-767.715	-331.627	-239.725	12.522
	1100.00	107.276	515.724	438.918	-251.488	84.487	-818.784	-331.195	-230.556	10.948
	1200.00	107.425	525.065	445.713	-240.752	95.223	-870.831	-330.812	-221.425	9.638
	1300.00	107.550	533.669	452.152	-230.003	105.972	-923.773	-330.479	-212.323	8.531
	1400.00	107.660	541.643	458.263	-219.243	116.732	-977.543	-330.197	-203.245	7.583
	1500.00	107.757	549.074	464.072	-208.472	127.503	-1032.084	-329.966	-194.185	6.762
	1600.00	107.845	556.032	469.605	-197.692	138.283	-1087.343	-329.787	-185.139	6.044
	1700.00	107.925	562.572	474.883	-186.903	149.072	-1143.276	-329.662	-176.103	5.411
	1800.00	108.000	568.743	479.928	-176.107	159.868	-1199.845	-329.589	-167.072	4.848
	1900.00	108.071	574.584	484.757	-165.303	170.672	-1257.014	-329.573	-158.044	4.345
	2000.00	108.138	580.129	489.388	-154.493	181.482	-1314.752	-329.618	-149.015	3.892

References

Phase	H / S	C _p
GAS	Ja1	Ja1

WCi5

TUNGSTEN PENTACHLORIDE

361.113

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	155.645	217.568	217.568	-512.958	0.000	-577.826	-512.958	-401.783	70.391
	300.00	155.868	218.531	217.571	-512.670	0.288	-578.229	-512.872	-401.093	69.837
	400.00	167.542	264.985	223.826	-496.494	16.464	-602.488	-507.830	-364.572	47.608
	500.00	178.849	303.589	236.020	-479.173	33.785	-630.968	-501.950	-329.420	34.414
	526.00	181.761	312.729	239.587	-474.485	38.473	-638.981	-500.274	-320.491	31.826
LIQ			39.112		20.573					
	526.00	182.004	351.841	239.587	-453.912	59.046	-638.981	-479.701	-320.491	31.826
	560.90	182.004	363.533	246.939	-447.560	65.398	-651.466	-477.410	-310.002	28.869

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 BPT= 560.9, L= 68.057 kJ

WCi5[g]

TUNGSTEN PENTACHLORIDE (GAS)

361.113

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	120.230	405.539	405.539	-412.542	0.000	-533.453	-412.542	-357.410	62.617
	300.00	120.366	406.283	405.541	-412.319	0.223	-534.204	-412.521	-357.068	62.171
	400.00	125.450	441.698	410.335	-399.997	12.545	-576.676	-411.332	-338.760	44.237
	500.00	128.011	469.995	419.533	-387.311	25.231	-622.309	-410.088	-320.761	33.510
	600.00	129.471	493.475	429.956	-374.431	38.111	-670.516	-408.854	-303.011	26.379
	700.00	130.381	513.506	440.496	-361.435	51.107	-720.889	-407.651	-285.467	21.302
	800.00	130.993	530.959	450.736	-348.364	64.178	-773.131	-406.488	-268.092	17.505
	900.00	131.430	546.414	460.525	-335.242	77.300	-827.015	-405.368	-250.860	14.560
	1000.00	131.764	560.280	469.819	-322.082	90.460	-882.361	-404.295	-233.750	12.210
	1100.00	132.035	572.851	478.623	-308.891	103.651	-939.027	-403.268	-216.746	10.292
	1200.00	132.268	584.350	486.961	-295.676	116.866	-996.896	-402.287	-199.833	8.699
	1300.00	132.482	594.945	494.866	-282.438	130.104	-1055.867	-401.352	-183.000	7.353
	1400.00	132.687	604.771	502.369	-269.180	143.362	-1115.859	-400.462	-166.237	6.202
	1500.00	132.892	613.932	509.505	-255.901	156.641	-1176.799	-399.618	-149.537	5.207
	1600.00	133.105	622.516	516.303	-242.601	169.941	-1238.626	-398.817	-132.891	4.338
	1700.00	133.330	630.592	522.790	-229.279	183.263	-1301.286	-398.061	-116.294	3.573
	1800.00	133.572	638.220	528.993	-215.934	196.608	-1364.730	-397.344	-99.740	2.894
	1900.00	133.833	645.448	534.934	-202.564	209.978	-1428.916	-396.671	-83.225	2.288
	2000.00	134.118	652.320	540.633	-189.167	223.375	-1493.807	-396.041	-66.745	1.743

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
S.-A1	298.15	175.430	238.488	238.488	-593.710	0.000	-664.815	-593.710	-455.511	79.804
	300.00	175.739	239.574	238.491	-593.385	0.325	-665.257	-593.619	-454.654	79.162
	400.00	192.462	292.421	245.584	-574.975	18.735	-691.944	-588.075	-409.134	53.427
	450.00	200.824	315.573	252.091	-565.143	28.567	-707.151	-584.821	-386.958	44.917
S.-A2			9.298		4.184					
	450.00	209.200	324.871	252.091	-560.959	32.751	-707.151	-580.637	-386.958	44.917
	500.00	209.200	346.912	260.490	-550.499	43.211	-723.955	-576.826	-365.643	38.198
	503.00	209.200	348.164	261.009	-549.871	43.839	-724.998	-576.600	-364.377	37.839
SOL-B			31.360		15.774					
	503.00	188.280	379.523	261.009	-534.097	59.613	-724.998	-560.826	-364.377	37.839
	555.00	188.280	398.046	272.995	-524.307	69.403	-745.222	-558.015	-344.209	32.396
LIQ			12.061		6.694					
	555.00	200.832	410.107	272.995	-517.613	76.097	-745.222	-551.321	-344.209	32.396
	600.00	200.832	425.765	283.873	-508.575	85.135	-764.034	-548.366	-327.533	28.514
	612.90	200.832	430.037	286.905	-505.985	87.725	-769.554	-547.526	-322.794	27.510

References

Phase	H / S	C _p	Remarks
S.-A1	Ja1	Ja1	
S.-A2	Ja1	Ja1	
SOL-B	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 BPT= 612.9, L= 59.911 kJ

Phase	T [K]	C _p [————— J / (K mol) —————]	S [(K mol) —————]	—(G-H298)/T— [—————]	H [—————]	H-H298 [—————]	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	143.938	419.346	419.346	-493.712	0.000	-618.740	-493.712	-409.436	71.731
	300.00	144.092	420.237	419.349	-493.446	0.266	-619.517	-493.679	-408.913	71.198
	400.00	149.769	462.572	425.082	-478.716	14.996	-663.745	-491.816	-380.935	49.745
	500.00	152.583	496.327	436.071	-463.584	30.128	-711.747	-489.911	-353.436	36.923
	600.00	154.173	524.299	448.511	-448.239	45.473	-762.819	-488.030	-326.318	28.408
	700.00	155.157	548.145	461.084	-432.769	60.943	-816.470	-486.191	-299.512	22.350
	800.00	155.806	568.908	473.292	-417.219	76.493	-872.345	-484.401	-272.966	17.823
	900.00	156.256	587.287	484.956	-401.615	92.097	-930.173	-482.663	-246.641	14.315
	1000.00	156.580	603.768	496.028	-385.972	107.740	-989.740	-480.978	-220.508	11.518
	1100.00	156.822	618.703	506.512	-370.301	123.411	-1050.875	-479.347	-194.540	9.238
	1200.00	157.005	632.357	516.438	-354.610	139.102	-1113.438	-477.772	-168.718	7.344
	1300.00	157.148	644.930	525.845	-338.902	154.810	-1177.310	-476.253	-143.026	5.747
	1400.00	157.262	656.580	534.772	-323.181	170.531	-1242.393	-474.792	-117.448	4.382
	1500.00	157.352	667.433	543.259	-307.450	186.262	-1308.600	-473.390	-91.973	3.203
	1600.00	157.426	677.591	551.340	-291.711	202.001	-1375.856	-472.048	-66.589	2.174
	1700.00	157.487	687.137	559.050	-275.965	217.747	-1444.098	-470.769	-41.288	1.269
	1800.00	157.538	696.140	566.419	-260.214	233.498	-1513.266	-469.550	-16.060	0.466
	1900.00	157.580	704.659	573.472	-244.458	249.254	-1583.310	-468.400	9.103	-0.250
	2000.00	157.615	712.743	580.236	-228.698	265.014	-1654.183	-467.321	34.206	-0.893

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [–]
GAS	298.15	263.459	711.389	711.389	–868.598	0.000	–1080.699	–868.598	–728.612	127.650
	300.00	263.662	713.020	711.394	–868.110	0.488	–1082.016	–868.514	–727.744	126.711
	400.00	271.256	790.046	721.845	–841.318	27.280	–1157.336	–863.988	–681.503	88.995
	500.00	275.112	851.032	741.796	–813.980	54.618	–1239.496	–859.534	–636.400	66.484
	600.00	277.319	901.403	764.321	–786.349	82.249	–1327.191	–855.195	–592.182	51.554
	700.00	278.696	944.263	787.042	–758.543	110.055	–1419.527	–850.975	–548.682	40.943
	800.00	279.609	981.541	809.075	–730.625	137.973	–1515.858	–846.872	–505.779	33.024
	900.00	280.245	1014.513	830.105	–702.631	165.967	–1615.693	–842.884	–463.383	26.894
	1000.00	280.705	1044.065	850.049	–674.582	194.016	–1718.647	–839.009	–421.425	22.013
	1100.00	281.047	1070.836	868.923	–646.494	222.104	–1824.413	–835.247	–379.850	18.038
	1200.00	281.309	1095.302	886.783	–618.375	250.223	–1932.737	–831.597	–338.612	14.739
	1300.00	281.512	1117.827	903.701	–590.234	278.364	–2043.409	–828.061	–297.674	11.961
	1400.00	281.673	1138.695	919.750	–562.074	306.524	–2156.248	–824.639	–257.004	9.589
	1500.00	281.803	1158.133	935.001	–533.900	334.698	–2271.100	–821.334	–216.575	7.542
	1600.00	281.908	1176.324	949.522	–505.714	362.884	–2387.833	–818.147	–176.362	5.758
	1700.00	281.995	1193.417	963.371	–477.519	391.079	–2506.328	–815.082	–136.345	4.189
	1800.00	282.066	1209.538	976.603	–449.316	419.282	–2626.484	–812.134	–96.505	2.801
	1900.00	282.126	1224.790	989.268	–421.106	447.492	–2748.207	–809.319	–56.825	1.562
	2000.00	282.177	1239.262	1001.409	–392.891	475.707	–2871.416	–806.640	–17.290	0.452

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [(K mol) —————]	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	32.382	250.731	250.731	386.183	0.000	311.428	386.183	351.397	-61.563
	300.00	32.431	250.931	250.732	386.243	0.060	310.964	386.169	351.181	-61.146
	400.00	34.211	260.538	252.029	389.586	3.403	285.371	385.440	339.629	-44.351
	500.00	35.141	268.281	254.531	393.058	6.875	258.918	384.716	328.260	-34.293
	600.00	35.736	274.744	257.376	396.604	10.421	231.758	383.967	317.039	-27.601
	700.00	36.172	280.286	260.262	400.200	14.017	204.000	383.188	305.945	-22.830
	800.00	36.524	285.140	263.075	403.835	17.652	175.723	382.375	294.965	-19.259
	900.00	36.827	289.460	265.771	407.503	21.320	146.989	381.530	284.090	-16.488
	1000.00	37.100	293.354	268.338	411.200	25.017	117.845	380.653	273.309	-14.276
	1100.00	37.353	296.902	270.776	414.923	28.740	88.330	379.743	262.619	-12.471
	1200.00	37.592	300.163	273.091	418.670	32.487	58.474	378.802	252.013	-10.970
	1300.00	37.822	303.181	275.291	422.441	36.258	28.305	377.829	241.486	-9.703
	1400.00	38.045	305.992	277.384	426.234	40.051	-2.155	376.825	231.035	-8.620
	1500.00	38.262	308.624	279.380	430.049	43.866	-32.887	375.790	220.658	-7.684
	1600.00	38.476	311.101	281.286	433.886	47.703	-63.875	374.722	210.350	-6.867
	1700.00	38.687	313.439	283.109	437.744	51.561	-95.103	373.623	200.111	-6.149
	1800.00	38.895	315.657	284.856	441.624	55.441	-126.558	372.493	189.936	-5.512
	1900.00	39.102	317.765	286.533	445.523	59.340	-158.230	371.328	179.826	-4.944
	2000.00	39.307	319.776	288.146	449.444	63.261	-190.108	370.127	169.778	-4.434

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [————— kJ / mol —————]	H–H298	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
GAS	298.15	119.032	341.122	341.122	–1721.716	0.000	–1823.422	–1721.716	–1632.294	285.971
	300.00	119.341	341.859	341.124	–1721.496	0.220	–1824.053	–1721.714	–1631.739	284.111
	400.00	132.427	378.145	345.983	–1708.851	12.865	–1860.109	–1721.176	–1601.808	209.175
	500.00	140.213	408.604	355.545	–1695.186	26.530	–1899.489	–1720.115	–1572.081	164.234
	600.00	145.022	434.626	366.611	–1680.907	40.809	–1941.682	–1718.812	–1542.594	134.295
	700.00	148.157	457.233	377.978	–1666.237	55.479	–1986.300	–1717.394	–1513.335	112.926
	800.00	150.301	477.165	389.155	–1651.308	70.408	–2033.040	–1715.928	–1484.284	96.914
	900.00	151.826	494.961	399.940	–1636.197	85.519	–2081.662	–1714.449	–1455.417	84.470
	1000.00	152.946	511.018	410.258	–1620.956	100.760	–2131.974	–1712.983	–1426.714	74.524
	1100.00	153.790	525.637	420.093	–1605.617	116.099	–2183.818	–1711.543	–1398.158	66.393
	1200.00	154.442	539.048	429.455	–1590.204	131.512	–2237.062	–1710.139	–1369.730	59.623
	1300.00	154.954	551.431	438.367	–1574.734	146.982	–2291.593	–1708.778	–1341.418	53.899
	1400.00	155.363	562.929	446.859	–1559.217	162.499	–2347.318	–1707.466	–1313.209	48.996
	1500.00	155.693	573.660	454.959	–1543.664	178.052	–2404.154	–1706.206	–1285.093	44.751
	1600.00	155.964	583.717	462.695	–1528.080	193.636	–2462.028	–1705.002	–1257.058	41.039
	1700.00	156.188	593.179	470.095	–1512.473	209.243	–2520.877	–1703.856	–1229.097	37.766
	1800.00	156.374	602.112	477.183	–1496.844	224.872	–2580.646	–1702.767	–1201.202	34.858
	1900.00	156.531	610.571	483.983	–1481.199	240.517	–2641.284	–1701.744	–1173.365	32.258
	2000.00	156.664	618.604	490.515	–1465.539	256.177	–2702.746	–1700.787	–1145.581	29.919

References

Phase	H / S	C _p	Remarks
GAS	Ja1	Ja1	Ja1 MPT= 275.2, L= 4.10 kJ / BPT= 290.0, L= 27.05 kJ

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		[-]
GAS	298.15	30.151	245.710	245.710	425.094	0.000	351.836	425.094	392.155	-68.704
	300.00	30.217	245.897	245.711	425.150	0.056	351.381	425.078	391.951	-68.245
	400.00	32.596	254.962	246.931	428.306	3.212	326.322	424.284	381.032	-49.758
	500.00	33.775	262.375	249.301	431.631	6.537	300.443	423.564	370.304	-38.685
	600.00	34.481	268.600	252.013	435.046	9.952	273.886	422.841	359.719	-31.316
	700.00	34.964	273.953	254.774	438.520	13.426	246.752	422.087	349.258	-26.062
	800.00	35.328	278.647	257.471	442.035	16.941	219.117	421.289	338.907	-22.128
	900.00	35.622	282.825	260.060	445.583	20.489	191.040	420.445	328.660	-19.075
	1000.00	35.874	286.592	262.528	449.158	24.064	162.566	419.556	318.509	-16.637
	1100.00	36.098	290.022	264.874	452.757	27.663	133.733	418.621	308.449	-14.647
	1200.00	36.302	293.172	267.102	456.377	31.283	104.571	417.642	298.476	-12.992
	1300.00	36.494	296.085	269.221	460.017	34.923	75.106	416.620	288.587	-11.596
	1400.00	36.675	298.796	271.238	463.675	38.581	45.361	415.556	278.778	-10.401
	1500.00	36.849	301.332	273.161	467.352	42.258	15.353	414.449	269.046	-9.369
	1600.00	37.018	303.716	274.997	471.045	45.951	-14.901	413.300	259.390	-8.468
	1700.00	37.182	305.965	276.753	474.755	49.661	-45.386	412.107	249.807	-7.676
	1800.00	37.343	308.095	278.435	478.481	53.387	-76.090	410.873	240.295	-6.973
	1900.00	37.502	310.118	280.050	482.224	57.130	-107.001	409.592	230.853	-6.347
	2000.00	37.658	312.046	281.602	485.982	60.888	-138.110	408.263	221.480	-5.784

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _r [–]
SOL	298.15	55.730	50.543	50.543	–589.693	0.000	–604.762	–589.693	–533.860	93.530
	300.00	55.907	50.888	50.544	–589.590	0.103	–604.856	–589.689	–533.514	92.893
	400.00	63.438	68.091	52.838	–583.592	6.101	–610.828	–589.127	–514.856	67.233
	500.00	68.139	82.790	57.396	–576.996	12.697	–618.391	–588.105	–496.400	51.859
	600.00	71.311	95.511	62.712	–570.014	19.679	–627.320	–586.841	–478.175	41.629
	700.00	73.636	106.686	68.212	–562.762	26.931	–637.442	–585.444	–460.173	34.338
	800.00	75.463	116.642	73.655	–555.303	34.390	–648.617	–583.967	–442.377	28.884
	900.00	76.980	125.620	78.938	–547.679	42.014	–660.738	–582.437	–424.769	24.653
	1000.00	78.236	133.801	84.022	–539.914	49.779	–673.715	–580.867	–407.335	21.277
	1100.00	79.020	141.296	88.893	–532.049	57.644	–687.475	–579.291	–390.058	18.522
	1200.00	79.860	148.206	93.551	–524.107	65.586	–701.954	–577.723	–372.924	16.233
	1300.00	81.099	154.643	98.006	–516.064	73.629	–717.100	–576.132	–355.921	14.301
	1400.00	82.885	160.715	102.270	–507.869	81.824	–732.871	–574.467	–339.044	12.650
	1500.00	85.210	166.510	106.361	–499.469	90.224	–749.234	–572.670	–322.290	11.223
	1600.00	87.953	172.095	110.296	–490.813	98.880	–766.166	–570.691	–305.661	9.979
	1700.00	90.908	177.516	114.091	–481.871	107.822	–783.648	–568.498	–289.163	8.885
	1800.00	93.804	182.795	117.762	–472.634	117.059	–801.664	–566.079	–272.800	7.916
	1900.00	96.321	187.937	121.321	–463.123	126.570	–820.202	–563.461	–256.577	7.054
	2000.00	98.108	192.927	124.777	–453.394	136.299	–839.247	–560.700	–240.497	6.281

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 DPT= 199.7, 3 WO2 = 2 WO3 + W

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	43.586	285.458	285.458	76.567	0.000	-8.542	76.567	62.360	-10.925
	300.00	43.703	285.728	285.459	76.648	0.081	-9.071	76.548	62.272	-10.842
	400.00	48.057	298.972	287.235	81.262	4.695	-38.327	75.726	57.645	-7.528
	500.00	50.442	309.973	290.715	86.196	9.629	-68.790	75.087	53.201	-5.558
	600.00	52.017	319.317	294.723	91.324	14.757	-100.267	74.497	48.879	-4.255
	700.00	53.179	327.427	298.828	96.586	20.019	-132.613	73.904	44.656	-3.332
	800.00	54.093	334.590	302.859	101.951	25.384	-165.720	73.288	40.520	-2.646
	900.00	54.839	341.005	306.748	107.399	30.832	-199.506	72.641	36.462	-2.116
	1000.00	55.459	346.816	310.468	112.915	36.348	-233.901	71.961	32.479	-1.697
	1100.00	55.977	352.127	314.018	118.487	41.920	-268.852	71.246	28.565	-1.356
	1200.00	56.405	357.017	317.400	124.107	47.540	-304.313	70.492	24.718	-1.076
	1300.00	56.754	361.546	320.624	129.766	53.199	-340.244	69.697	20.935	-0.841
	1400.00	57.030	365.762	323.699	135.456	58.889	-376.612	68.858	17.215	-0.642
	1500.00	57.236	369.705	326.636	141.170	64.603	-413.387	67.968	13.557	-0.472
	1600.00	57.375	373.403	329.445	146.901	70.334	-450.544	67.023	9.960	-0.325
	1700.00	57.450	376.884	332.134	152.643	76.076	-488.061	66.015	6.424	-0.197
	1800.00	57.461	380.169	334.712	158.389	81.822	-525.915	64.943	2.950	-0.086
	1900.00	57.410	383.274	337.187	164.133	87.566	-564.088	63.794	-0.464	0.013
	2000.00	57.297	386.216	339.566	169.868	93.301	-602.564	62.562	-3.814	0.100

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	—(G–H298)/T— [—————]	H [—————]	H–H298 [—————]	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [—]
SOL	298.15	67.784	68.408	68.408	–781.153	0.000	–801.549	–781.153	–708.627	124.149
	300.00	68.057	68.829	68.410	–781.027	0.126	–801.676	–781.146	–708.177	123.305
	400.00	78.067	89.959	71.223	–773.658	7.495	–809.642	–780.283	–683.962	89.316
	500.00	83.355	107.998	76.821	–765.565	15.588	–819.564	–778.864	–660.038	68.954
	600.00	86.784	123.517	83.341	–757.048	24.105	–831.158	–777.202	–636.426	55.406
	700.00	89.334	137.094	90.071	–748.237	32.916	–844.203	–775.418	–613.104	45.750
	800.00	91.418	149.163	96.717	–739.196	41.957	–858.527	–773.560	–590.042	38.526
	900.00	93.229	160.037	103.158	–729.962	51.191	–873.995	–771.647	–567.216	32.920
	1000.00	94.871	169.946	109.349	–720.556	60.597	–890.502	–769.683	–544.607	28.447
	1100.00	96.403	179.061	115.277	–710.992	70.161	–907.958	–767.670	–522.196	24.797
	1200.00	97.860	187.512	120.949	–701.278	79.875	–926.292	–765.607	–499.971	21.763
	1300.00	99.263	195.400	126.376	–691.421	89.732	–945.442	–763.494	–477.920	19.203
	1400.00	100.629	202.807	131.573	–681.427	99.726	–965.356	–761.329	–456.034	17.015
	1500.00	101.966	209.795	136.557	–671.297	109.856	–985.989	–759.114	–434.304	15.124
	1600.00	103.281	216.418	141.344	–661.034	120.119	–1007.303	–756.848	–412.724	13.474
	1700.00	104.580	222.718	145.946	–650.641	130.512	–1029.262	–754.533	–391.286	12.023
	1800.00	105.865	228.732	150.380	–640.119	141.034	–1051.837	–752.166	–369.987	10.737
	1900.00	107.140	234.490	154.656	–629.468	151.685	–1075.000	–749.755	–348.820	9.590
	2000.00	108.407	240.018	158.787	–618.691	162.462	–1098.727	–747.300	–327.782	8.561

References

Phase	H / S	C _p
SOL	Ja1	Ja1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
SOL	298.15	70.765	73.387	73.387	-820.064	0.000	-841.944	-820.064	-743.518	130.261
	300.00	71.057	73.826	73.389	-819.933	0.131	-842.081	-820.057	-743.043	129.375
	400.00	81.713	95.923	76.329	-812.226	7.838	-850.596	-819.124	-717.488	93.694
	500.00	87.264	114.808	82.186	-803.753	16.311	-861.157	-817.600	-692.248	72.319
	600.00	90.807	131.051	89.009	-794.839	25.225	-873.469	-815.825	-667.341	58.097
	700.00	93.401	145.252	96.050	-785.623	34.441	-887.299	-813.929	-642.743	47.962
	800.00	95.490	157.865	103.004	-776.175	43.889	-902.467	-811.965	-618.421	40.379
	900.00	97.284	169.218	109.740	-766.535	53.529	-918.830	-809.951	-594.349	34.495
	1000.00	98.896	179.552	116.212	-756.724	63.340	-936.276	-807.894	-570.503	29.800
	1100.00	100.389	189.049	122.408	-746.759	73.305	-954.713	-805.797	-546.865	25.968
	1200.00	101.801	197.845	128.332	-736.649	83.415	-974.063	-803.657	-523.419	22.784
	1300.00	103.155	206.047	133.998	-726.401	93.663	-994.262	-801.474	-500.155	20.096
	1400.00	104.468	213.740	139.422	-716.020	104.044	-1015.255	-799.248	-477.059	17.799
	1500.00	105.750	220.991	144.621	-705.508	114.556	-1036.995	-796.979	-454.125	15.814
	1600.00	107.009	227.857	149.610	-694.870	125.194	-1059.441	-794.668	-431.343	14.082
	1700.00	108.249	234.381	154.407	-684.107	135.957	-1082.555	-792.315	-408.707	12.558
	1800.00	109.476	240.603	159.024	-673.221	146.843	-1106.307	-789.919	-386.211	11.208
	1900.00	110.691	246.555	163.475	-662.212	157.852	-1130.667	-787.486	-363.849	10.003
	2000.00	111.898	252.263	167.773	-651.083	168.981	-1155.610	-785.018	-341.616	8.922

References

Phase	H / S	C _p
SOL	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—————]
SOL	298.15	71.732	74.894	74.894	-834.959	0.000	-857.289	-834.959	-757.027	132.628
	300.00	72.031	75.338	74.895	-834.826	0.133	-857.427	-834.951	-756.544	131.726
	400.00	82.929	97.754	77.877	-827.008	7.951	-866.110	-833.996	-730.527	95.397
	500.00	88.593	116.923	83.820	-818.407	16.552	-876.869	-832.437	-704.832	73.633
	600.00	92.196	133.414	90.744	-809.357	25.602	-889.405	-830.620	-679.479	59.154
	700.00	94.826	147.833	97.891	-800.000	34.959	-903.483	-828.681	-654.441	48.835
	800.00	96.937	160.637	104.949	-790.409	44.550	-918.918	-826.673	-629.685	41.114
	900.00	98.747	172.161	111.787	-780.623	54.336	-935.568	-824.616	-605.185	35.124
	1000.00	100.369	182.650	118.357	-770.665	64.294	-953.316	-822.517	-580.916	30.344
	1100.00	101.869	192.288	124.646	-760.553	74.406	-972.069	-820.376	-556.859	26.443
	1200.00	103.286	201.213	130.659	-750.294	84.665	-991.750	-818.195	-532.999	23.201
	1300.00	104.645	209.534	136.410	-739.897	95.062	-1012.292	-815.971	-509.322	20.465
	1400.00	105.960	217.338	141.915	-729.367	105.592	-1033.639	-813.704	-485.819	18.126
	1500.00	107.244	224.692	147.190	-718.706	116.253	-1055.744	-811.395	-462.479	16.105
	1600.00	108.505	231.654	152.254	-707.919	127.040	-1078.565	-809.044	-439.294	14.341
	1700.00	109.746	238.269	157.120	-697.006	137.953	-1102.064	-806.653	-416.258	12.790
	1800.00	110.973	244.577	161.805	-685.970	148.989	-1126.208	-804.218	-393.363	11.415
	1900.00	112.189	250.609	166.321	-674.812	160.147	-1150.970	-801.748	-370.605	10.189
	2000.00	113.396	256.395	170.681	-663.532	171.427	-1176.322	-799.243	-347.978	9.088

References

Phase	H / S	C _p
SOL	Ja1	Ja1

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-1	298.15	72.791	75.898	75.898	-842.909	0.000	-865.538	-842.909	-764.053	133.859
	300.00	73.063	76.349	75.899	-842.774	0.135	-865.679	-842.901	-763.564	132.948
	400.00	83.186	98.929	78.909	-834.901	8.008	-874.473	-841.949	-737.239	96.274
	500.00	88.739	118.137	84.885	-826.283	16.626	-885.351	-840.434	-711.229	74.302
	600.00	92.495	134.666	91.837	-817.211	25.698	-898.011	-838.660	-685.552	59.683
	700.00	95.401	149.150	99.011	-807.812	35.097	-912.217	-836.743	-660.184	49.264
	800.00	97.854	162.053	106.099	-798.146	44.763	-927.788	-834.727	-635.098	41.468
	900.00	100.045	173.707	112.974	-788.249	54.660	-944.586	-832.628	-610.269	35.419
	1000.00	102.072	184.354	119.587	-778.142	64.767	-962.496	-830.448	-585.679	30.593
	1050.00	103.043	189.358	122.791	-773.015	69.894	-971.840	-829.327	-573.468	28.528
SOL-2			1.414		1.485					
	1050.00	98.143	190.772	122.791	-771.530	71.379	-971.840	-827.842	-573.468	28.528
	1100.00	98.961	195.356	125.986	-766.602	76.307	-981.494	-826.950	-561.376	26.658
	1200.00	100.598	204.037	132.133	-756.624	86.285	-1001.469	-825.120	-537.313	23.389
	1300.00	102.236	212.154	137.980	-746.482	96.427	-1022.283	-823.223	-513.405	20.629
	1400.00	103.873	219.790	143.553	-736.177	106.732	-1043.883	-821.253	-489.647	18.269
	1500.00	105.510	227.013	148.879	-725.708	117.201	-1066.227	-819.208	-466.031	16.229
	1600.00	107.147	233.875	153.978	-715.075	127.834	-1089.274	-817.086	-442.555	14.448
	1700.00	108.784	240.419	158.872	-704.278	138.631	-1112.991	-814.884	-419.214	12.881
	1745.00	109.521	243.271	161.012	-699.366	143.543	-1123.874	-813.866	-408.753	12.236
LIQ			42.080		73.429					
	1745.00	131.796	285.351	161.012	-625.937	216.972	-1123.874	-740.437	-408.753	12.236
	1800.00	131.796	289.441	164.874	-618.689	224.220	-1139.682	-737.970	-398.338	11.559
	1900.00	131.796	296.567	171.619	-605.509	237.400	-1168.985	-733.554	-379.590	10.436
	2000.00	131.796	303.327	178.037	-592.329	250.580	-1198.983	-729.224	-361.073	9.430
	2100.00	131.796	309.757	184.157	-579.150	263.759	-1229.640	-724.976	-342.770	8.526
	2110.00	131.796	310.383	184.754	-577.832	265.077	-1232.740	-724.556	-340.951	8.441

References

Phase	H / S	C _p	Remarks
SOL-1	Ja1	Ja1	
SOL-2	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 NBPT= 2110., GAS (W3O9 + W2O6 + W4O12 + W3O8)

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _i [–]
GAS	298.15	60.715	286.295	286.295	–292.880	0.000	–378.239	–292.880	–276.754	48.486
	300.00	60.906	286.671	286.296	–292.767	0.113	–378.769	–292.894	–276.654	48.170
	400.00	67.957	305.284	288.786	–286.281	6.599	–408.394	–293.329	–271.161	35.410
	500.00	71.717	320.887	293.690	–279.281	13.599	–439.725	–293.433	–265.603	27.747
	600.00	74.133	334.190	299.359	–271.981	20.899	–472.495	–293.430	–260.036	22.638
	700.00	75.875	345.755	305.179	–264.477	28.403	–506.505	–293.408	–254.472	18.989
	800.00	77.221	355.978	310.902	–256.819	36.061	–541.602	–293.401	–248.911	16.252
	900.00	78.304	365.138	316.428	–249.041	43.839	–577.666	–293.420	–243.349	14.124
	1000.00	79.194	373.436	321.721	–241.165	51.715	–614.601	–293.470	–237.783	12.421
	1100.00	79.931	381.019	326.772	–233.208	59.672	–652.329	–293.556	–232.211	11.027
	1200.00	80.540	388.001	331.587	–225.183	67.697	–690.785	–293.679	–226.629	9.865
	1300.00	81.035	394.468	336.179	–217.103	75.777	–729.912	–293.844	–221.035	8.881
	1400.00	81.427	400.489	340.560	–208.979	83.901	–769.663	–294.056	–215.426	8.038
	1500.00	81.721	406.117	344.745	–200.821	92.059	–809.997	–294.322	–209.801	7.306
	1600.00	81.923	411.398	348.747	–192.638	100.242	–850.875	–294.649	–204.156	6.665
	1700.00	82.036	416.369	352.580	–184.440	108.440	–892.266	–295.045	–198.489	6.099
	1800.00	82.062	421.059	356.255	–176.234	116.646	–934.140	–295.516	–192.796	5.595
	1900.00	82.004	425.494	359.784	–168.030	124.850	–976.469	–296.075	–187.074	5.143
	2000.00	81.862	429.697	363.175	–159.836	133.044	–1019.231	–296.730	–181.321	4.736

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[—————]	J / (K mol)	—————]	[—————]	kJ / mol	—————]	—————]	—————]	[-]
GAS	298.15	153.657	415.581	415.581	-1163.989	0.000	-1287.894	-1163.989	-1084.925	190.074
	300.00	153.939	416.532	415.584	-1163.704	0.285	-1288.664	-1163.957	-1084.435	188.817
	400.00	164.899	462.494	421.776	-1147.702	16.287	-1332.699	-1161.798	-1058.232	138.191
	500.00	170.765	499.983	433.786	-1130.891	33.098	-1380.882	-1159.194	-1032.638	107.879
	600.00	174.215	531.447	447.512	-1113.628	50.361	-1432.496	-1156.525	-1007.578	87.717
	700.00	176.402	558.479	461.479	-1096.089	67.900	-1487.024	-1153.952	-982.958	73.349
	800.00	177.869	582.136	475.113	-1078.371	85.618	-1544.080	-1151.533	-958.698	62.597
	900.00	178.899	603.149	488.194	-1060.530	103.459	-1603.363	-1149.286	-934.730	54.250
	1000.00	179.647	622.038	500.650	-1042.600	121.389	-1664.639	-1147.211	-911.003	47.586
	1100.00	180.207	639.188	512.476	-1024.606	139.383	-1727.713	-1145.302	-887.476	42.143
	1200.00	180.636	654.887	523.699	-1006.563	157.426	-1792.428	-1143.555	-864.116	37.614
	1300.00	180.970	669.359	534.354	-988.482	175.507	-1858.650	-1141.963	-840.895	33.788
	1400.00	181.236	682.781	544.483	-970.372	193.617	-1926.265	-1140.525	-817.791	30.512
	1500.00	181.449	695.292	554.124	-952.237	211.752	-1995.176	-1139.239	-794.784	27.677
	1600.00	181.623	707.009	563.317	-934.083	229.906	-2065.297	-1138.105	-771.859	25.199
	1700.00	181.766	718.024	572.097	-915.913	248.076	-2136.554	-1137.125	-748.999	23.014
	1800.00	181.885	728.417	580.495	-897.731	266.258	-2208.881	-1136.294	-726.193	21.074
	1900.00	181.984	738.254	588.542	-879.537	284.452	-2282.219	-1135.626	-703.428	19.339
	2000.00	182.067	747.590	596.263	-861.334	302.655	-2356.515	-1135.123	-680.695	17.778

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [————— kJ / mol —————]	H–H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [–]
GAS	298.15	206.289	493.821	493.821	–1710.001	0.000	–1857.234	–1710.001	–1583.363	277.399
	300.00	206.679	495.099	493.825	–1709.619	0.382	–1858.149	–1709.971	–1582.577	275.551
	400.00	223.560	557.062	502.159	–1688.040	21.961	–1910.864	–1707.672	–1540.425	201.159
	500.00	233.815	608.144	518.399	–1665.129	44.872	–1969.201	–1704.541	–1498.965	156.596
	600.00	240.207	651.382	537.053	–1641.404	68.597	–2032.233	–1701.128	–1458.169	126.945
	700.00	244.398	688.746	556.116	–1617.160	92.841	–2099.282	–1697.704	–1417.947	105.809
	800.00	247.276	721.580	574.788	–1592.568	117.433	–2169.832	–1694.394	–1378.210	89.988
	900.00	249.330	750.830	592.753	–1567.732	142.269	–2243.479	–1691.246	–1338.877	77.706
	1000.00	250.844	777.182	609.900	–1542.719	167.282	–2319.901	–1688.283	–1299.886	67.899
	1100.00	251.990	801.146	626.213	–1517.575	192.426	–2398.836	–1685.513	–1261.182	59.889
	1200.00	252.877	823.112	641.719	–1492.330	217.671	–2480.064	–1682.937	–1222.721	53.224
	1300.00	253.577	843.381	656.462	–1467.006	242.995	–2563.401	–1680.555	–1184.468	47.593
	1400.00	254.139	862.195	670.493	–1441.619	268.382	–2648.691	–1678.370	–1146.391	42.772
	1500.00	254.595	879.744	683.865	–1416.182	293.819	–2735.798	–1676.385	–1108.463	38.600
	1600.00	254.971	896.188	696.627	–1390.703	319.298	–2824.604	–1674.603	–1070.660	34.953
	1700.00	255.284	911.655	708.825	–1365.189	344.812	–2915.003	–1673.028	–1032.963	31.739
	1800.00	255.546	926.254	720.503	–1339.648	370.353	–3006.906	–1671.657	–995.353	28.884
	1900.00	255.769	940.077	731.699	–1314.082	395.919	–3100.228	–1670.509	–957.813	26.332
	2000.00	255.959	953.201	742.448	–1288.495	421.506	–3194.898	–1669.590	–920.328	24.036

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[-]
GAS	298.15	222.952	504.700	504.700	-2023.382	0.000	-2173.858	-2023.382	-1869.405	327.512
	300.00	223.428	506.080	504.704	-2022.969	0.413	-2174.793	-2023.349	-1868.449	325.326
	400.00	243.542	573.361	513.740	-1999.534	23.848	-2228.878	-2020.679	-1817.177	237.299
	500.00	255.458	629.099	531.401	-1974.533	48.849	-2289.083	-2016.988	-1766.716	184.568
	600.00	262.809	676.375	551.725	-1948.592	74.790	-2354.417	-2012.938	-1717.040	149.482
	700.00	267.599	717.271	572.519	-1922.056	101.326	-2424.146	-2008.850	-1668.047	124.471
	800.00	270.876	753.231	592.906	-1895.122	128.260	-2497.707	-2004.866	-1619.635	105.751
	900.00	273.208	785.277	612.533	-1867.912	155.470	-2574.662	-2001.047	-1571.712	91.220
	1000.00	274.923	814.156	631.275	-1840.501	182.881	-2654.657	-1997.417	-1524.204	79.616
	1100.00	276.219	840.422	649.113	-1812.941	210.441	-2737.406	-1993.985	-1477.051	70.139
	1200.00	277.220	864.501	666.072	-1785.267	238.115	-2822.669	-1990.755	-1430.201	62.255
	1300.00	278.009	886.723	682.202	-1757.504	265.878	-2910.244	-1987.726	-1383.612	55.594
	1400.00	278.640	907.350	697.556	-1729.671	293.711	-2999.960	-1984.901	-1337.249	49.893
	1500.00	279.153	926.592	712.191	-1701.780	321.602	-3091.668	-1982.283	-1291.081	44.959
	1600.00	279.575	944.622	726.160	-1673.843	349.539	-3185.238	-1979.876	-1245.081	40.648
	1700.00	279.925	961.582	739.515	-1645.868	377.514	-3280.557	-1977.685	-1199.224	36.848
	1800.00	280.219	977.591	752.301	-1617.860	405.522	-3377.523	-1975.706	-1153.491	33.473
	1900.00	280.467	992.748	764.560	-1589.825	433.557	-3476.047	-1973.959	-1107.861	30.457
	2000.00	280.679	1007.140	776.333	-1561.768	461.614	-3576.047	-1972.450	-1062.317	27.745

References

Phase	H / S	C _p
GAS	Ja1	Ja1

927.393

TETRATUNGSTEN DODECAOXIDE (GAS)

W4O12[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	309.195	605.116	605.116	-2804.117	0.000	-2984.532	-2804.117	-2578.594	451.759
	300.00	309.772	607.030	605.122	-2803.544	0.573	-2985.654	-2804.050	-2577.195	448.730
	400.00	334.303	699.806	617.604	-2771.236	32.881	-3051.159	-2799.429	-2502.224	326.757
	500.00	348.909	776.110	641.904	-2737.014	67.103	-3125.069	-2793.620	-2428.580	253.712
	600.00	357.937	840.583	669.785	-2701.638	102.479	-3205.988	-2787.432	-2356.151	205.121
	700.00	363.829	896.232	698.251	-2665.530	138.587	-3292.893	-2781.255	-2284.761	170.491
	800.00	367.864	945.094	726.115	-2628.933	175.184	-3385.009	-2775.258	-2214.246	144.575
	900.00	370.737	988.598	752.907	-2591.996	212.121	-3481.733	-2769.509	-2144.467	124.462
	1000.00	372.852	1027.773	778.467	-2554.811	249.306	-3582.584	-2764.031	-2075.314	108.403
	1100.00	374.452	1063.388	802.775	-2517.442	286.675	-3687.170	-2758.834	-2006.696	95.290
	1200.00	375.688	1096.025	825.872	-2479.933	324.184	-3795.163	-2753.916	-1938.539	84.382
	1300.00	376.664	1126.136	847.826	-2442.313	361.804	-3906.291	-2749.275	-1870.781	75.169
	1400.00	377.445	1154.080	868.715	-2404.606	399.511	-4020.318	-2744.913	-1803.370	67.285
	1500.00	378.081	1180.143	888.618	-2366.829	437.288	-4137.044	-2740.832	-1736.261	60.462
	1600.00	378.604	1204.561	907.609	-2328.994	475.123	-4256.292	-2737.038	-1669.415	54.501
	1700.00	379.039	1227.527	925.759	-2291.111	513.006	-4377.908	-2733.534	-1602.798	49.248
	1800.00	379.404	1249.203	943.132	-2253.188	550.929	-4501.754	-2730.316	-1536.378	44.585
	1900.00	379.714	1269.725	959.786	-2215.232	588.885	-4627.710	-2727.410	-1470.129	40.417
	2000.00	379.978	1289.209	975.774	-2177.247	626.870	-4755.665	-2724.824	-1404.025	36.669

References

Phase	H / S	C _p
GAS	Ja1	Ja1

341.660

TUNGSTEN TETRACHLORIDE OXIDE

WOC14

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	146.256	172.799	172.799	-671.114	0.000	-722.634	-671.114	-549.270	96.230
	300.00	146.450	173.705	172.802	-670.843	0.271	-722.955	-671.041	-548.514	95.505
	400.00	156.900	217.266	178.671	-655.676	15.438	-742.582	-666.759	-508.298	66.377
	484.00	165.686	247.985	188.096	-642.127	28.987	-762.152	-662.590	-475.422	51.309
			93.760		45.380					
LIQ	484.00	182.004	341.746	188.096	-596.747	74.367	-762.152	-617.210	-475.422	51.309
	492.00	182.004	344.729	190.618	-595.291	75.823	-764.898	-616.656	-473.083	50.226

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 BPT= 492., L= 43.9 kJ

WOCl4[g]

TUNGSTEN TETRACHLORIDE OXIDE (GAS)

341.660

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	106.157	377.088	377.088	-573.208	0.000	-685.637	-573.208	-512.272	89.748
	300.00	106.334	377.745	377.090	-573.011	0.197	-686.335	-573.209	-511.894	89.129
	400.00	114.524	409.531	381.368	-561.943	11.265	-725.755	-573.026	-491.471	64.179
	500.00	119.827	435.701	389.695	-550.205	23.003	-768.055	-572.474	-471.140	49.220
	600.00	123.222	457.870	399.258	-538.041	35.167	-812.763	-571.717	-450.942	39.258
	700.00	125.483	477.046	409.031	-525.598	47.610	-859.530	-570.857	-430.880	32.153
	800.00	127.053	493.910	418.609	-512.967	60.241	-908.095	-569.949	-410.945	26.832
	900.00	128.185	508.944	427.826	-500.202	73.006	-958.251	-569.027	-391.125	22.700
	1000.00	129.028	522.495	436.626	-487.339	85.869	-1009.834	-568.112	-371.407	19.400
	1100.00	129.671	534.824	445.001	-474.403	98.805	-1062.709	-567.216	-351.780	16.705
	1200.00	130.174	546.129	452.964	-461.410	111.798	-1116.765	-566.350	-332.233	14.462
	1300.00	130.576	556.565	460.537	-448.371	124.837	-1171.906	-565.519	-312.758	12.567
	1400.00	130.901	566.254	467.747	-435.297	137.911	-1228.053	-564.730	-293.344	10.945
	1500.00	131.170	575.295	474.618	-422.193	151.015	-1285.136	-563.986	-273.986	9.541
	1600.00	131.394	583.768	481.178	-409.065	164.143	-1343.093	-563.293	-254.675	8.314
	1700.00	131.584	591.739	487.450	-395.915	177.293	-1401.873	-562.653	-235.407	7.233
	1800.00	131.746	599.265	493.455	-382.749	190.459	-1461.426	-562.067	-216.174	6.273
	1900.00	131.885	606.392	499.213	-369.567	203.641	-1521.712	-561.544	-196.972	5.415
	2000.00	132.007	613.160	504.742	-356.372	216.836	-1582.693	-561.086	-177.797	4.644

References

Phase	H / S	C _p
GAS	Ja1	Ja1

WO2Cl2

TUNGSTEN DICHLORIDE DIOXIDE

286.754

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	104.356	200.832	200.832	-780.316	0.000	-840.194	-780.316	-702.770	123.122
	300.00	104.570	201.478	200.834	-780.123	0.193	-840.566	-780.285	-702.289	122.279
	400.00	115.369	233.069	205.068	-769.116	11.200	-862.343	-778.181	-676.584	88.353
	500.00	125.423	259.901	213.414	-757.073	23.243	-887.023	-775.283	-651.504	68.062
	600.00	135.183	283.633	223.175	-744.041	36.275	-914.221	-771.604	-627.081	54.592
	642.00	139.236	292.915	227.436	-738.278	42.038	-926.330	-769.824	-617.025	50.203

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 NDPT= 642., GAS (WOCl4 + WO2Cl2 + WCl6)

286.754

TUNGSTEN DICHLORIDE DIOXIDE (GAS)

WO2Cl2[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
GAS	298.15	87.217	354.076	354.076	–671.532	0.000	–777.100	–671.532	–639.675	112.068
	300.00	87.340	354.616	354.077	–671.371	0.161	–777.755	–671.533	–639.478	111.343
	400.00	93.356	380.606	357.580	–662.321	9.211	–814.564	–671.387	–628.805	82.114
	500.00	97.465	401.913	364.380	–652.766	18.766	–853.722	–670.976	–618.203	64.583
	600.00	100.148	419.937	372.176	–642.876	28.656	–894.838	–670.439	–607.698	52.905
	700.00	101.953	435.519	380.137	–632.765	38.767	–937.628	–669.860	–597.287	44.570
	800.00	103.215	449.220	387.934	–622.503	49.029	–981.879	–669.285	–586.959	38.324
	900.00	104.129	461.432	395.434	–612.134	59.398	–1027.423	–668.735	–576.701	33.471
	1000.00	104.812	472.440	402.593	–601.685	69.847	–1074.125	–668.224	–566.503	29.591
	1100.00	105.335	482.455	409.405	–591.177	80.355	–1121.878	–667.757	–556.354	26.419
	1200.00	105.745	491.639	415.881	–580.622	90.910	–1170.589	–667.340	–546.245	23.777
	1300.00	106.073	500.117	422.038	–570.030	101.502	–1220.182	–666.974	–536.169	21.544
	1400.00	106.339	507.987	427.900	–559.409	112.123	–1270.592	–666.664	–526.119	19.630
	1500.00	106.560	515.332	433.487	–548.764	122.768	–1321.762	–666.411	–516.089	17.972
	1600.00	106.744	522.215	438.819	–538.099	133.433	–1373.643	–666.218	–506.074	16.522
	1700.00	106.900	528.691	443.917	–527.416	144.116	–1426.191	–666.088	–496.070	15.242
	1800.00	107.034	534.805	448.798	–516.719	154.813	–1479.369	–666.019	–486.071	14.105
	1900.00	107.150	540.596	453.479	–506.010	165.522	–1533.142	–666.021	–476.074	13.088
	2000.00	107.251	546.094	457.973	–495.290	176.242	–1587.478	–666.094	–466.075	12.173

References

Phase	H / S	C _p
GAS	Ja1	Ja1

275.843

TUNGSTEN TETRAFLUORIDE OXIDE

WOF4

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [–]
SOL	298.15	133.603	175.728	175.728	–1394.360	0.000	–1446.753	–1394.360	–1285.507	225.215
	300.00	133.890	176.555	175.731	–1394.113	0.247	–1447.079	–1394.301	–1284.831	223.709
	379.00	146.963	209.294	179.394	–1383.028	11.332	–1462.350	–1391.380	–1256.342	173.152
LIQ			13.248		5.021					
	379.00	182.004	222.542	179.394	–1378.007	16.353	–1462.350	–1386.359	–1256.342	173.152
	400.00	182.004	232.357	181.919	–1374.185	20.175	–1467.128	–1384.751	–1249.182	163.126
	460.00	182.004	257.794	190.196	–1363.265	31.095	–1481.850	–1380.251	–1229.170	139.577

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 BPT= 460., L= 56.11 kJ

WOF4[g]

TUNGSTEN TETRAFLUORIDE OXIDE (GAS)

275.843

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	95.862	334.704	334.704	-1336.621	0.000	-1436.413	-1336.621	-1275.166	223.404
	300.00	96.120	335.298	334.706	-1336.443	0.178	-1437.033	-1336.631	-1274.785	221.960
	400.00	107.749	364.658	338.630	-1326.210	10.411	-1472.073	-1336.776	-1254.127	163.772
	500.00	115.109	389.556	346.390	-1315.038	21.583	-1509.816	-1336.375	-1233.504	128.863
	600.00	119.783	410.987	355.413	-1303.277	33.344	-1549.869	-1335.697	-1212.990	105.600
	700.00	122.886	429.700	364.717	-1291.133	45.488	-1591.923	-1334.882	-1192.602	88.993
	800.00	125.037	446.258	373.895	-1278.731	57.890	-1635.737	-1334.004	-1172.336	76.546
	900.00	126.585	461.079	382.773	-1266.146	70.475	-1681.117	-1333.107	-1152.181	66.871
	1000.00	127.735	474.478	391.284	-1253.427	83.194	-1727.905	-1332.213	-1132.126	59.136
	1100.00	128.611	486.696	399.411	-1240.608	96.013	-1775.973	-1331.341	-1112.160	52.812
	1200.00	129.292	497.917	407.159	-1227.711	108.910	-1825.211	-1330.500	-1092.272	47.545
	1300.00	129.831	508.288	414.544	-1214.754	121.867	-1875.528	-1329.697	-1072.452	43.092
	1400.00	130.264	517.926	421.588	-1201.749	134.872	-1926.845	-1328.940	-1052.693	39.276
	1500.00	130.616	526.925	428.314	-1188.704	147.917	-1979.092	-1328.232	-1032.986	35.972
	1600.00	130.904	535.365	434.744	-1175.628	160.993	-2032.211	-1327.579	-1013.325	33.082
	1700.00	131.141	543.308	440.899	-1162.525	174.096	-2086.149	-1326.982	-993.702	30.533
	1800.00	131.337	550.809	446.798	-1149.401	187.220	-2140.858	-1326.443	-974.114	28.268
	1900.00	131.500	557.915	452.461	-1136.259	200.362	-2196.297	-1325.970	-954.553	26.242
	2000.00	131.634	564.664	457.904	-1123.102	213.519	-2252.429	-1325.565	-935.015	24.420

References

Phase	H / S	C _p
GAS	Ja1	Ja1

WO2I2[g]

TUNGSTEN DIIODIDE DIOXIDE (GAS)

469.658

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	92.071	377.088	377.088	-428.860	0.000	-541.289	-428.860	-435.759	76.343
	300.00	92.284	377.658	377.090	-428.689	0.171	-541.987	-428.890	-435.801	75.880
	400.00	103.081	405.714	380.842	-418.911	9.949	-581.197	-446.186	-437.339	57.111
	500.00	113.135	429.804	388.277	-408.097	20.763	-622.999	-489.139	-430.984	45.025
	600.00	122.897	451.296	397.019	-396.294	32.566	-667.072	-486.805	-419.558	36.526
	700.00	132.521	470.965	406.196	-383.522	45.338	-713.198	-483.651	-408.588	30.489
	800.00	142.071	489.285	415.450	-369.792	59.068	-761.220	-479.675	-398.127	25.995
	900.00	151.578	506.567	424.622	-355.109	73.751	-811.020	-474.867	-388.213	22.531
	1000.00	161.059	523.029	433.646	-339.477	89.383	-862.506	-469.218	-378.880	19.791

References

Phase	H / S	C _p	Remarks
GAS	Tk1/e	e	Tk1 SPT= 841., L= 164.8 kJ

247.982

TUNGSTEN DISULFIDE

WS2

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]					[-
SOL	298.15	63.545	64.852	64.852	-259.408	0.000	-278.744	-259.408	-249.891	43.780
	300.00	63.693	65.246	64.853	-259.290	0.118	-278.864	-259.420	-249.832	43.500
	400.00	69.462	84.446	67.432	-252.602	6.806	-286.381	-264.359	-246.377	32.174
	500.00	72.971	100.347	72.471	-245.470	13.938	-295.643	-267.546	-241.552	25.235
	600.00	75.589	113.891	78.273	-238.037	21.371	-306.372	-269.823	-236.119	20.556
	700.00	77.788	125.712	84.224	-230.366	29.042	-318.364	-271.372	-230.375	17.191
	800.00	79.763	136.230	90.079	-222.487	36.921	-331.471	-272.857	-224.419	14.653
	900.00	81.607	145.732	95.743	-214.418	44.990	-345.577	-379.890	-215.969	12.535
	1000.00	83.371	154.422	101.183	-206.168	53.240	-360.591	-378.044	-197.854	10.335
	1100.00	85.082	162.449	106.392	-197.745	61.663	-376.439	-376.085	-179.929	8.544
	1200.00	86.757	169.924	111.378	-189.153	70.255	-393.062	-374.014	-162.187	7.060
	1300.00	88.406	176.934	116.154	-180.395	79.013	-410.408	-371.834	-144.622	5.811
	1400.00	90.037	183.545	120.734	-171.472	87.936	-428.435	-369.546	-127.229	4.747
	1500.00	91.655	189.812	125.132	-162.388	97.020	-447.106	-367.151	-110.004	3.831

References

Phase	H / S	C _p	Remarks
SOL	Mi1	Mi1	Tk1 TPT= 2073.

131.290

XENON (GAS)

Xe[g]

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— J / (K mol) —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[————— kJ / mol —————]	[-]
GAS	298.15	20.786	169.683	169.683	0.000	0.000	-50.591	0.000	0.000	0.000
	300.00	20.786	169.811	169.683	0.038	0.038	-50.905	0.000	0.000	0.000
	400.00	20.786	175.791	170.499	2.117	2.117	-68.199	0.000	0.000	0.000
	500.00	20.786	180.429	172.038	4.196	4.196	-86.019	0.000	0.000	0.000
	600.00	20.786	184.219	173.762	6.274	6.274	-104.257	0.000	0.000	0.000
	700.00	20.786	187.423	175.491	8.353	8.353	-122.843	0.000	0.000	0.000
	800.00	20.786	190.199	177.160	10.432	10.432	-141.728	0.000	0.000	0.000
	900.00	20.786	192.647	178.747	12.510	12.510	-160.872	0.000	0.000	0.000
	1000.00	20.786	194.837	180.249	14.589	14.589	-180.249	0.000	0.000	0.000
	1100.00	20.786	196.818	181.666	16.667	16.667	-199.833	0.000	0.000	0.000
	1200.00	20.786	198.627	183.005	18.746	18.746	-219.607	0.000	0.000	0.000
	1300.00	20.786	200.291	184.272	20.825	20.825	-239.554	0.000	0.000	0.000
	1400.00	20.786	201.831	185.472	22.903	22.903	-259.661	0.000	0.000	0.000
	1500.00	20.786	203.265	186.611	24.982	24.982	-279.916	0.000	0.000	0.000
	1600.00	20.786	204.607	187.694	27.060	27.060	-300.311	0.000	0.000	0.000
	1700.00	20.786	205.867	188.726	29.139	29.139	-320.835	0.000	0.000	0.000
	1800.00	20.786	207.055	189.712	31.218	31.218	-341.482	0.000	0.000	0.000
	1900.00	20.786	208.179	190.655	33.296	33.296	-362.244	0.000	0.000	0.000
	2000.00	20.786	209.245	191.558	35.375	35.375	-383.115	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
SOL—A	298.15	26.525	44.434	44.434	0.000	0.000	-13.248	0.000	0.000	0.000
	300.00	26.539	44.598	44.435	0.049	0.049	-13.330	0.000	0.000	0.000
	400.00	27.166	52.323	45.484	2.736	2.736	-18.193	0.000	0.000	0.000
	500.00	27.810	58.452	47.485	5.484	5.484	-23.742	0.000	0.000	0.000
	600.00	28.530	63.585	49.752	8.300	8.300	-29.851	0.000	0.000	0.000
	700.00	29.284	68.040	52.053	11.191	11.191	-36.437	0.000	0.000	0.000
	800.00	30.044	72.000	54.303	14.157	14.157	-43.442	0.000	0.000	0.000
	900.00	30.798	75.582	56.471	17.199	17.199	-50.824	0.000	0.000	0.000
	1000.00	31.541	78.865	58.549	20.316	20.316	-58.549	0.000	0.000	0.000
	1100.00	32.275	81.906	60.536	23.507	23.507	-66.589	0.000	0.000	0.000
	1200.00	33.008	84.746	62.436	26.771	26.771	-74.923	0.000	0.000	0.000
	1300.00	33.745	87.417	64.256	30.109	30.109	-83.533	0.000	0.000	0.000
	1400.00	34.497	89.945	66.001	33.521	33.521	-92.402	0.000	0.000	0.000
	1500.00	35.275	92.351	67.678	37.009	37.009	-101.518	0.000	0.000	0.000
	1600.00	36.087	94.654	69.293	40.577	40.577	-110.869	0.000	0.000	0.000
	1700.00	36.947	96.867	70.850	44.228	44.228	-120.445	0.000	0.000	0.000
	1752.00	37.416	97.987	71.639	46.162	46.162	-125.512	0.000	0.000	0.000
SOL—B			2.849		4.992					
	1752.00	35.020	100.836	71.639	51.154	51.154	-125.512	0.000	0.000	0.000
	1799.00	35.020	101.764	72.414	52.800	52.800	-130.273	0.000	0.000	0.000
LIQ			6.335		11.397					
	1799.00	43.095	108.099	72.414	64.197	64.197	-130.273	0.000	0.000	0.000
	1800.00	43.095	108.123	72.434	64.240	64.240	-130.381	0.000	0.000	0.000
	1900.00	43.095	110.453	74.374	68.549	68.549	-141.311	0.000	0.000	0.000
	2000.00	43.095	112.663	76.234	72.859	72.859	-152.468	0.000	0.000	0.000
	2100.00	43.095	114.766	78.019	77.168	77.168	-163.840	0.000	0.000	0.000
	2200.00	43.095	116.771	79.735	81.478	81.478	-175.418	0.000	0.000	0.000
	2300.00	43.095	118.686	81.387	85.787	85.787	-187.191	0.000	0.000	0.000
	2400.00	43.095	120.520	82.980	90.097	90.097	-199.152	0.000	0.000	0.000
	2500.00	43.095	122.280	84.517	94.406	94.406	-211.293	0.000	0.000	0.000
	2600.00	43.095	123.970	86.002	98.716	98.716	-223.606	0.000	0.000	0.000
	2700.00	43.095	125.596	87.439	103.025	103.025	-236.085	0.000	0.000	0.000
	2800.00	43.095	127.164	88.830	107.335	107.335	-248.723	0.000	0.000	0.000
	2900.00	43.095	128.676	90.178	111.645	111.645	-261.515	0.000	0.000	0.000
	3000.00	43.095	130.137	91.486	115.954	115.954	-274.457	0.000	0.000	0.000
	3100.00	43.095	131.550	92.755	120.264	120.264	-287.541	0.000	0.000	0.000
	3200.00	43.095	132.918	93.989	124.573	124.573	-300.765	0.000	0.000	0.000
	3300.00	43.095	134.244	95.189	128.883	128.883	-314.123	0.000	0.000	0.000
	3400.00	43.095	135.531	96.357	133.192	133.192	-327.613	0.000	0.000	0.000
	3500.00	43.095	136.780	97.494	137.502	137.502	-341.228	0.000	0.000	0.000
	3600.00	43.095	137.994	98.602	141.811	141.811	-354.967	0.000	0.000	0.000
	3607.00	43.095	138.078	98.679	142.113	142.113	-355.934	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL—A	Hu1	Hu1	
SOL—B	Hu1	Hu1	
LIQ	Hu1	Hu1	BPT= 3607., L= 363.34 kJ

88.906		YTTRIUM (GAS)								Y[g]
Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	25.860	179.469	179.469	424.676	0.000	371.167	424.676	384.415	-67.348
	300.00	25.867	179.629	179.470	424.724	0.048	370.835	424.675	384.165	-66.889
	400.00	25.303	187.022	180.481	427.292	2.616	352.483	424.557	370.677	-48.405
	500.00	24.368	192.566	182.368	429.775	5.099	333.492	424.291	357.234	-37.320
	600.00	23.594	196.937	184.445	432.171	7.495	314.009	423.871	343.860	-29.936
	700.00	23.000	200.528	186.494	434.500	9.824	294.130	423.309	330.567	-24.667
	800.00	22.551	203.568	188.443	436.776	12.100	273.922	422.619	317.364	-20.722
	900.00	22.212	206.204	190.273	439.014	14.338	253.430	421.814	304.254	-17.658
	1000.00	21.957	208.530	191.985	441.221	16.545	232.691	420.905	291.240	-15.213
	1100.00	21.767	210.614	193.585	443.407	18.731	211.732	419.900	278.321	-13.216
	1200.00	21.629	212.501	195.084	445.577	20.901	190.575	418.805	265.498	-11.557
	1300.00	21.530	214.228	196.491	447.734	23.058	169.237	417.625	252.770	-10.156
	1400.00	21.462	215.821	197.816	449.884	25.208	147.734	416.363	240.136	-8.960
	1500.00	21.417	217.300	199.066	452.027	27.351	126.077	415.018	227.594	-7.926
	1600.00	21.413	218.682	200.249	454.168	29.492	104.277	413.591	215.146	-7.024
	1700.00	21.461	219.982	201.372	456.312	31.636	82.343	412.083	202.789	-6.231
	1800.00	21.557	221.211	202.441	458.462	33.786	60.283	394.222	190.664	-5.533
	1900.00	21.704	222.380	203.460	460.625	35.949	38.103	392.076	179.414	-4.932
	2000.00	21.906	223.498	204.434	462.805	38.129	15.809	389.946	168.276	-4.395
	2100.00	22.168	224.573	205.367	465.008	40.332	-6.595	387.840	157.245	-3.911
	2200.00	22.496	225.612	206.264	467.241	42.565	-29.105	385.763	146.313	-3.474
	2300.00	22.893	226.620	207.127	469.509	44.833	-51.717	383.722	135.475	-3.077
	2400.00	23.362	227.604	207.960	471.822	47.146	-74.428	381.725	124.724	-2.715
	2500.00	23.901	228.568	208.765	474.184	49.508	-97.237	379.778	114.056	-2.383
	2600.00	24.511	229.517	209.545	476.604	51.928	-120.141	377.888	103.465	-2.079
	2700.00	25.189	230.455	210.302	479.089	54.413	-143.140	376.063	92.945	-1.798
	2800.00	25.931	231.384	211.039	481.644	56.968	-166.232	374.309	82.491	-1.539
	2900.00	26.732	232.308	211.756	484.277	59.601	-189.416	372.632	72.099	-1.299
	3000.00	27.587	233.229	212.456	486.992	62.316	-212.693	371.038	61.763	-1.075
	3100.00	28.488	234.148	213.141	489.796	65.120	-236.062	369.532	51.479	-0.867
	3200.00	29.430	235.067	213.812	492.691	68.015	-259.523	368.118	41.242	-0.673
	3300.00	30.404	235.987	214.470	495.683	71.007	-283.076	366.800	31.048	-0.491
	3400.00	31.402	236.910	215.117	498.773	74.097	-306.720	365.581	20.892	-0.321
	3500.00	32.414	237.835	215.752	501.964	77.288	-330.458	364.462	10.771	-0.161
	3600.00	33.433	238.762	216.379	505.256	80.580	-354.287	363.445	0.680	-0.010
	3700.00	34.447	239.692	216.996	508.650	83.974	-378.210	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

YAsO4

YTTRIUM ARSENATE

227.825

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	120.750	160.540	160.540	-1515.110	0.000	-1562.975	-1515.110	-1416.752	248.209
	300.00	121.056	161.288	160.542	-1514.886	0.224	-1563.273	-1515.090	-1416.142	246.572
	400.00	133.037	197.928	165.457	-1502.122	12.988	-1581.293	-1513.460	-1383.380	180.651
	500.00	140.495	228.464	175.090	-1488.423	26.687	-1602.655	-1511.195	-1351.113	141.150
	600.00	146.172	254.598	186.216	-1474.080	41.030	-1626.839	-1508.610	-1319.335	114.858
	700.00	151.009	277.502	197.654	-1459.216	55.894	-1653.468	-1505.823	-1288.007	96.112
	784.00	154.717	294.824	207.151	-1446.374	68.736	-1677.516	-1503.355	-1262.011	84.082

References

Phase	H / S	C _p
SOL	G1	G1

YCl3

YTTRIUM TRICHLORIDE

195.264

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	92.047	136.817	136.817	-999.976	0.000	-1040.768	-999.976	-927.737	162.536
	300.00	92.221	137.387	136.819	-999.806	0.170	-1041.022	-999.949	-927.288	161.455
	400.00	98.431	164.889	140.526	-990.231	9.745	-1056.186	-998.261	-903.313	117.961
	500.00	101.479	187.214	147.703	-980.220	19.756	-1073.827	-996.355	-879.794	91.911
	600.00	103.281	205.888	155.887	-969.976	30.000	-1093.508	-994.380	-856.666	74.579
	700.00	104.496	221.905	164.201	-959.583	40.393	-1114.917	-992.393	-833.871	62.224
	800.00	105.398	235.920	172.308	-949.087	50.889	-1137.823	-990.421	-811.360	52.976
	900.00	106.117	248.377	180.081	-938.510	61.466	-1162.049	-988.475	-789.095	45.798
	994.00	106.689	258.948	187.047	-928.507	71.469	-1185.901	-986.675	-768.362	40.377
LIQ			31.654		31.464					
	994.00	135.712	290.602	187.047	-897.043	102.933	-1185.901	-955.211	-768.362	40.377
	1000.00	135.712	291.418	187.671	-896.229	103.747	-1187.647	-954.923	-767.235	40.076
	1100.00	135.712	304.353	197.700	-882.658	117.318	-1217.446	-950.173	-748.697	35.553
	1200.00	135.712	316.162	207.087	-869.086	130.890	-1248.480	-945.512	-730.587	31.802
	1300.00	135.712	327.024	215.901	-855.515	144.461	-1280.647	-940.938	-712.863	28.643
	1400.00	135.712	337.082	224.202	-841.944	158.032	-1313.858	-936.450	-695.487	25.949
	1500.00	135.712	346.445	232.043	-828.373	171.603	-1348.040	-932.050	-678.430	23.625
	1600.00	135.712	355.204	239.470	-814.802	185.174	-1383.127	-927.741	-661.663	21.601
	1700.00	135.712	363.431	246.522	-801.230	198.746	-1419.063	-923.526	-645.163	19.823

References

Phase	H / S	C _p
SOL	Pa2	Dw4
LIQ	Dw4	Dw4

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	—(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [—]
SOL-A	298.15	86.915	88.701	88.701	-1718.369	0.000	-1744.815	-1718.369	-1640.872	287.474
	300.00	87.169	89.239	88.702	-1718.208	0.161	-1744.980	-1718.344	-1640.391	285.618
	400.00	96.161	115.730	92.253	-1708.978	9.391	-1755.270	-1716.621	-1614.651	210.852
	500.00	100.412	137.695	99.211	-1699.127	19.242	-1767.974	-1714.563	-1589.393	166.043
	600.00	102.796	156.231	107.210	-1688.957	29.412	-1782.695	-1712.418	-1564.560	136.207
	700.00	104.299	172.198	115.380	-1678.597	39.772	-1799.135	-1710.274	-1540.087	114.923
	800.00	105.333	186.197	123.376	-1668.112	50.257	-1817.069	-1708.165	-1515.918	98.979
	900.00	106.093	198.649	131.060	-1657.539	60.830	-1836.323	-1706.106	-1492.012	86.594
	1000.00	106.684	209.859	138.389	-1646.899	71.470	-1856.758	-1704.104	-1468.332	76.698
	1100.00	107.164	220.050	145.356	-1636.206	82.163	-1878.261	-1702.161	-1444.849	68.610
	1200.00	107.568	229.392	151.976	-1625.469	92.900	-1900.740	-1700.280	-1421.540	61.878
	1300.00	107.920	238.016	158.267	-1614.694	103.675	-1924.116	-1698.463	-1398.386	56.188
	1350.00	108.080	242.092	161.296	-1609.294	109.075	-1936.119	-1697.579	-1386.862	53.661
			24.050		32.468					
SOL-B	1350.00	122.303	266.143	161.296	-1576.826	141.543	-1936.119	-1665.111	-1386.862	53.661
	1400.00	122.303	270.591	165.121	-1570.711	147.658	-1949.538	-1663.536	-1376.585	51.361
	1428.00	122.303	273.013	167.213	-1567.287	151.082	-1957.148	-1662.665	-1370.855	50.144
LIQ			19.587		27.970					
	1428.00	133.683	292.599	167.213	-1539.317	179.052	-1957.148	-1634.695	-1370.855	50.144
	1500.00	133.683	299.175	173.390	-1529.691	188.678	-1978.454	-1631.670	-1357.627	47.277
	1600.00	133.683	307.803	181.524	-1516.323	202.046	-2008.808	-1627.554	-1339.492	43.730
	1700.00	133.683	315.907	189.193	-1502.955	215.414	-2039.997	-1623.540	-1321.612	40.608
	1800.00	133.683	323.549	196.447	-1489.587	228.782	-2071.974	-1635.902	-1303.823	37.836

References

Phase	H / S	C _p	Remarks
SOL-A	Pa2	Pa2	orthorhombic
SOL-B	S3	Pa2	hexagonal
LIQ	S3	Pa2	

YI3

YTTRIUM TRIIODIDE

469.619

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
							kJ / mol			
SOL	298.15	96.018	207.108	207.108	-616.722	0.000	-678.471	-616.722	-613.282	107.444
	300.00	96.141	207.702	207.110	-616.544	0.178	-678.855	-616.744	-613.260	106.778
	400.00	100.892	236.085	210.947	-606.667	10.055	-701.101	-642.012	-611.079	79.799
	500.00	103.709	258.922	218.333	-596.428	20.294	-725.889	-706.811	-597.110	62.380
	600.00	105.765	278.020	226.733	-585.950	30.772	-752.762	-704.777	-575.359	50.089
	700.00	107.461	294.454	235.260	-575.286	41.436	-781.404	-702.648	-553.957	41.337
	800.00	108.966	308.903	243.580	-564.464	52.258	-811.586	-700.450	-532.865	34.793
	900.00	110.359	321.819	251.569	-553.497	63.225	-843.134	-698.196	-512.052	29.719
	1000.00	111.684	333.515	259.188	-542.394	74.328	-875.910	-695.891	-491.492	25.673

References

Phase	H / S	C _p
SOL	Nb1/e	e

YN

YTTRIUM NITRIDE

102.913

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
							kJ / mol			
SOL	298.15	39.302	37.656	37.656	-299.156	0.000	-310.383	-299.156	-268.571	47.053
	300.00	39.416	37.899	37.657	-299.083	0.073	-310.453	-299.159	-268.381	46.729
	400.00	43.623	49.888	39.263	-294.906	4.250	-314.861	-299.127	-258.117	33.707
	500.00	45.919	59.890	42.417	-290.420	8.736	-320.364	-298.859	-247.893	25.897
	600.00	47.463	68.406	46.056	-285.746	13.410	-326.790	-298.494	-237.733	20.696
	700.00	48.651	75.814	49.790	-280.939	18.217	-334.009	-298.098	-227.637	16.986
	800.00	49.650	82.378	53.461	-276.022	23.134	-341.924	-297.703	-217.598	14.208
	900.00	50.538	88.278	57.007	-271.012	28.144	-350.462	-297.323	-207.608	12.049
	1000.00	51.359	93.645	60.406	-265.917	33.239	-359.562	-296.965	-197.659	10.325
	1100.00	52.134	98.577	63.655	-260.742	38.414	-369.177	-296.629	-187.745	8.915
	1200.00	52.879	103.145	66.758	-255.491	43.665	-379.266	-296.317	-177.861	7.742
	1300.00	53.603	107.407	69.723	-250.167	48.989	-389.796	-296.027	-168.001	6.750
	1400.00	54.311	111.405	72.559	-244.771	54.385	-400.738	-295.760	-158.163	5.901
	1500.00	55.008	115.176	75.275	-239.305	59.851	-412.069	-295.517	-148.344	5.166
	1600.00	55.696	118.748	77.882	-233.770	65.386	-423.767	-295.299	-138.539	4.523
	1700.00	56.377	122.145	80.386	-228.166	70.990	-435.813	-295.109	-128.748	3.956
	1800.00	57.053	125.387	82.797	-222.494	76.662	-448.191	-311.224	-118.825	3.448
	1900.00	57.725	128.489	85.121	-216.756	82.400	-460.886	-311.579	-108.126	2.973
	2000.00	58.393	131.467	87.364	-210.950	88.206	-473.884	-311.877	-97.410	2.544
	2100.00	59.058	134.332	89.533	-205.077	94.079	-487.175	-312.116	-86.681	2.156
	2200.00	59.722	137.095	91.632	-199.138	100.018	-500.747	-312.297	-75.941	1.803

References

Phase	H / S	C _p
SOL	Ku1/e	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [————— kJ / mol —————]	H–H298	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL–A	298.15	102.509	99.081	99.081	–1905.310	0.000	–1934.851	–1905.310	–1816.608	318.262
	300.00	102.795	99.716	99.083	–1905.120	0.190	–1935.035	–1905.300	–1816.058	316.204
	400.00	113.045	130.891	103.264	–1894.259	11.051	–1946.616	–1904.268	–1786.444	233.286
	500.00	118.108	156.716	111.449	–1882.677	22.633	–1961.035	–1902.770	–1757.157	183.569
	600.00	121.128	178.537	120.860	–1870.704	34.606	–1977.826	–1901.170	–1728.184	150.452
	700.00	123.184	197.372	130.475	–1858.483	46.827	–1996.643	–1899.612	–1699.478	126.817
	800.00	124.726	213.926	139.893	–1846.084	59.226	–2017.224	–1898.152	–1670.988	109.104
	900.00	125.969	228.690	148.954	–1833.547	71.763	–2039.368	–1896.808	–1642.675	95.338
	1000.00	127.027	242.018	157.605	–1820.896	84.414	–2062.915	–1895.583	–1614.504	84.333
	1100.00	127.963	254.170	165.839	–1808.146	97.164	–2087.733	–1894.479	–1586.451	75.334
	1200.00	128.817	265.341	173.672	–1795.306	110.004	–2113.716	–1893.491	–1558.493	67.839
	1300.00	129.613	275.684	181.126	–1782.385	122.925	–2140.774	–1892.619	–1530.612	61.501
	1330.00	129.843	278.644	183.292	–1778.493	126.817	–2149.089	–1892.380	–1522.261	59.786
			0.975		1.297					
SOL–B	1330.00	131.796	279.619	183.292	–1777.196	128.114	–2149.089	–1891.083	–1522.261	59.786
	1400.00	131.796	286.379	188.279	–1767.970	137.340	–2168.901	–1890.448	–1502.866	56.073
	1500.00	131.796	295.472	195.126	–1754.790	150.520	–2197.998	–1889.707	–1475.209	51.371
	1600.00	131.796	303.978	201.666	–1741.611	163.699	–2227.975	–1889.163	–1447.595	47.259
	1700.00	131.796	311.968	207.922	–1728.431	176.879	–2258.777	–1888.824	–1420.008	43.632
	1800.00	131.796	319.501	213.913	–1715.252	190.058	–2290.354	–1921.241	–1392.153	40.399
	1900.00	131.796	326.627	219.660	–1702.072	203.238	–2322.663	–1922.290	–1362.730	37.464
	2000.00	131.796	333.387	225.179	–1688.892	216.418	–2355.667	–1923.373	–1333.252	34.821

References

Phase	H / S	C _p
SOL–A	Nb1	Pa1
SOL–B	Pa1	Pa1

Phase	T [K]	C _p [————— J / (K mol)]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	215.034	199.995	199.995	-4121.993	0.000	-4181.622	-4121.993	-3917.872	686.395
	300.00	215.736	201.328	199.999	-4121.595	0.398	-4181.993	-4121.976	-3916.605	681.942
	400.00	241.134	267.351	208.829	-4098.584	23.409	-4205.524	-4119.857	-3848.413	502.551
	500.00	253.969	322.672	226.223	-4073.769	48.224	-4235.105	-4116.493	-3780.927	394.991
	600.00	261.858	369.722	246.318	-4047.951	74.042	-4269.784	-4112.749	-3714.163	323.347
	700.00	267.412	410.526	266.927	-4021.473	100.520	-4308.842	-4108.975	-3648.031	272.219
	800.00	271.722	446.525	287.170	-3994.509	127.484	-4351.729	-4105.323	-3582.433	233.909
	900.00	275.308	478.742	306.698	-3967.153	154.840	-4398.021	-4101.865	-3517.282	204.138
	1000.00	278.445	507.914	325.384	-3939.462	182.531	-4447.377	-4098.637	-3452.504	180.340
	1100.00	281.289	534.588	343.207	-3911.474	210.519	-4499.521	-4095.655	-3388.037	160.884
	1200.00	283.932	559.178	360.193	-3883.211	238.782	-4554.225	-4100.346	-3323.387	144.663
	1300.00	286.435	582.004	376.388	-3854.692	267.301	-4611.297	-4096.780	-3258.786	130.940
	1400.00	288.835	603.320	391.845	-3825.928	296.065	-4670.575	-4093.308	-3194.456	119.187
	1500.00	291.160	623.327	406.617	-3796.927	325.066	-4731.918	-4089.955	-3130.370	109.009

References

Phase	H / S	C _p
SOL	K5/e	e

173.040

YTTERBIUM

Yb

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _r [— —]
SOL-A	298.15	26.736	59.831	59.831	0.000	0.000	-17.839	0.000	0.000	0.000
	300.00	26.762	59.997	59.832	0.049	0.049	-17.950	0.000	0.000	0.000
	400.00	27.615	67.809	60.892	2.767	2.767	-24.357	0.000	0.000	0.000
	500.00	31.004	74.253	62.931	5.661	5.661	-31.466	0.000	0.000	0.000
	600.00	29.832	80.202	65.330	8.923	8.923	-39.198	0.000	0.000	0.000
	700.00	30.322	84.829	67.793	11.925	11.925	-47.455	0.000	0.000	0.000
	800.00	30.820	88.912	70.182	14.983	14.983	-56.146	0.000	0.000	0.000
	900.00	31.359	92.571	72.470	18.091	18.091	-65.223	0.000	0.000	0.000
	1000.00	31.940	95.907	74.649	21.258	21.258	-74.649	0.000	0.000	0.000
	1033.00	32.022	96.946	75.345	22.313	22.313	-77.832	0.000	0.000	0.000
SOL-B			1.693		1.749					
	1033.00	36.108	98.639	75.345	24.062	24.062	-77.832	0.000	0.000	0.000
	1097.00	36.108	100.809	76.768	26.373	26.373	-84.215	0.000	0.000	0.000
LIQ			6.980		7.657					
	1097.00	36.777	107.789	76.768	34.030	34.030	-84.215	0.000	0.000	0.000
	1100.00	36.777	107.890	76.853	34.141	34.141	-84.538	0.000	0.000	0.000
	1200.00	36.777	111.090	79.575	37.818	37.818	-95.489	0.000	0.000	0.000
	1300.00	36.777	114.034	82.114	41.496	41.496	-106.748	0.000	0.000	0.000
	1400.00	36.777	116.759	84.492	45.174	45.174	-118.289	0.000	0.000	0.000
	1465.00	36.777	118.428	85.961	47.564	47.564	-125.933	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL-A	Hu1	Hu1	Hu1 2nd order TPT= 553.
SOL-B	Hu1	Hu1	
LIQ	Hu1	Hu1	BPT= 1465., L= 128.83 kJ

Yb[g]

YTTERBIUM (GAS)

173.040

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	20.786	173.126	173.126	152.088	0.000	100.470	152.088	118.309	-20.727
	300.00	20.786	173.255	173.127	152.126	0.038	100.150	152.077	118.100	-20.563
	400.00	20.786	179.235	173.942	154.205	2.117	82.511	151.438	106.868	-13.956
	500.00	20.786	183.873	175.482	156.284	4.196	64.347	150.623	95.813	-10.010
	600.00	20.786	187.663	177.205	158.362	6.274	45.765	149.440	84.963	-7.397
	700.00	20.786	190.867	178.934	160.441	8.353	26.834	148.516	74.289	-5.544
	800.00	20.786	193.642	180.603	162.520	10.432	7.606	147.536	63.752	-4.163
	900.00	20.786	196.091	182.191	164.598	12.510	-11.883	146.507	53.340	-3.096
	1000.00	20.786	198.281	183.692	166.677	14.589	-31.604	145.419	43.045	-2.248
	1100.00	20.786	200.262	185.110	168.755	16.667	-51.533	134.615	33.005	-1.567
	1200.00	20.786	202.070	186.449	170.834	18.746	-71.651	133.016	23.839	-1.038
	1300.00	20.786	203.734	187.715	172.913	20.825	-91.942	131.417	14.806	-0.595
	1400.00	20.786	205.275	188.915	174.991	22.903	-112.393	129.817	5.896	-0.220
	1500.00	20.786	206.709	190.054	177.070	24.982	-132.993	0.000	0.000	0.000
	1600.00	20.786	208.050	191.137	179.148	27.060	-153.732	0.000	0.000	0.000
	1700.00	20.786	209.310	192.170	181.227	29.139	-174.601	0.000	0.000	0.000
	1800.00	20.786	210.498	193.155	183.306	31.218	-195.592	0.000	0.000	0.000
	1900.00	20.786	211.622	194.098	185.384	33.296	-216.698	0.000	0.000	0.000
	2000.00	20.786	212.689	195.001	187.463	35.375	-237.914	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

YbCl2

YTTERBIUM DICHLORIDE

243.945

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	82.937	130.541	130.541	-799.562	0.000	-838.483	-799.562	-754.122	132.119
	300.00	82.969	131.054	130.542	-799.409	0.153	-838.725	-799.521	-753.840	131.255
	400.00	84.684	155.157	133.817	-791.026	8.536	-853.089	-797.323	-738.945	96.496
	500.00	86.400	174.238	140.058	-782.472	17.090	-869.591	-795.234	-724.598	75.698
	600.00	88.115	190.143	147.116	-773.746	25.816	-887.832	-793.405	-710.639	61.867
	700.00	89.830	203.854	154.264	-764.849	34.713	-907.547	-791.187	-697.019	52.012
	800.00	91.546	215.962	161.234	-755.780	43.782	-928.549	-788.881	-683.723	44.643
	900.00	93.261	226.843	167.929	-746.540	53.022	-950.698	-786.474	-670.722	38.928
	1000.00	94.977	236.758	174.324	-737.128	62.434	-973.886	-783.970	-657.994	34.370

References

Phase	H / S	C _p
SOL	Nb1/e	e

279.398

YTTERBIUM TRICHLORIDE

YbCl3

Phase	T [K]	C _p [————— J / (K mol)]	S [————— J / (K mol)]	–(G–H298)/T [————— kJ / mol]	H [————— kJ / mol]	H–H298 [————— kJ / mol]	G [————— kJ / mol]	ΔH _f [————— kJ / mol]	ΔG _f [————— kJ / mol]	log K _f [–]
SOL	298.15	95.348	147.695	147.695	–959.810	0.000	–1003.845	–959.810	–886.223	155.263
	300.00	95.391	148.285	147.697	–959.634	0.176	–1004.119	–959.777	–885.767	154.226
	400.00	97.239	175.999	151.463	–949.996	9.814	–1020.395	–958.057	–861.358	112.482
	500.00	98.596	197.849	158.632	–940.201	19.609	–1039.126	–956.514	–837.369	87.479
	600.00	99.759	215.930	166.717	–930.283	29.527	–1059.840	–955.310	–813.651	70.835
	700.00	100.831	231.389	174.878	–920.253	39.557	–1082.225	–953.797	–790.161	58.963
	800.00	101.854	244.920	182.805	–910.118	49.692	–1106.054	–952.279	–766.888	50.073
	900.00	102.849	256.974	190.389	–899.883	59.927	–1131.160	–950.739	–743.807	43.169
	1000.00	103.826	267.861	197.600	–889.549	70.261	–1157.410	–949.184	–720.897	37.656

References

Phase	H / S	C _p
SOL	Nb1/e	e

279.398

YTTERBIUM TRICHLORIDE (GAS)

YbCl3[g]

Phase	T [K]	C _p [————— J / (K mol)]	S [————— J / (K mol)]	–(G–H298)/T [————— kJ / mol]	H [————— kJ / mol]	H–H298 [————— kJ / mol]	G [————— kJ / mol]	ΔH _f [————— kJ / mol]	ΔG _f [————— kJ / mol]	log K _f [–]
GAS	298.15	78.068	369.988	369.988	–638.897	0.000	–749.209	–638.897	–631.587	110.651
	300.00	78.128	370.471	369.989	–638.753	0.144	–749.894	–638.896	–631.541	109.961
	400.00	80.244	393.280	373.085	–630.819	8.078	–788.131	–638.881	–629.094	82.151
	500.00	81.232	411.304	378.989	–622.740	16.157	–828.392	–639.052	–626.635	65.464
	600.00	81.775	426.167	385.650	–614.587	24.310	–870.287	–639.614	–624.098	54.333
	700.00	82.108	438.799	392.363	–606.392	32.505	–913.551	–639.936	–621.487	46.376
	800.00	82.330	449.779	398.869	–598.169	40.728	–957.992	–640.330	–618.826	40.405
	900.00	82.487	459.485	405.075	–589.928	48.969	–1003.464	–640.784	–616.111	35.758
	1000.00	82.603	468.182	410.958	–581.673	57.224	–1049.855	–641.308	–613.342	32.038
	1100.00	82.694	476.060	416.524	–573.408	65.489	–1097.074	–651.557	–610.375	28.984
	1200.00	82.766	483.258	421.790	–565.135	73.762	–1145.045	–652.607	–606.585	26.404
	1300.00	82.825	489.885	426.776	–556.855	82.042	–1193.706	–653.665	–602.707	24.217
	1400.00	82.875	496.025	431.506	–548.570	90.327	–1243.006	–654.729	–598.748	22.340
	1500.00	82.919	501.745	436.000	–540.280	98.617	–1292.897	–784.018	–591.811	20.609
	1600.00	82.957	507.097	440.278	–531.987	106.910	–1343.342	–783.497	–579.015	18.903
	1700.00	82.992	512.128	444.358	–523.689	115.208	–1394.306	–782.983	–566.250	17.399
	1800.00	83.023	516.872	448.256	–515.388	123.509	–1445.758	–782.476	–553.516	16.063
	1900.00	83.052	521.362	451.987	–507.085	131.812	–1497.672	–781.977	–540.810	14.868
	2000.00	83.078	525.622	455.563	–498.778	140.119	–1550.023	–781.487	–528.129	13.793

References

Phase	H / S	C _p
GAS	Pa2	Pa2

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL-A	298.15	115.352	133.101	133.101	-1814.517	0.000	-1854.201	-1814.517	-1726.777	302.524
	300.00	115.572	133.816	133.104	-1814.303	0.214	-1854.448	-1814.484	-1726.233	300.564
	400.00	123.310	168.282	137.750	-1802.304	12.213	-1869.617	-1812.376	-1697.119	221.621
	500.00	126.906	196.229	146.742	-1789.774	24.743	-1887.888	-1810.222	-1668.564	174.314
	600.00	128.871	219.556	156.988	-1776.976	37.541	-1908.710	-1808.687	-1640.374	142.807
	700.00	130.066	239.518	167.386	-1764.025	50.492	-1931.687	-1806.623	-1612.486	120.325
	800.00	130.851	256.941	177.515	-1750.976	63.541	-1956.529	-1804.696	-1584.886	103.482
	900.00	131.397	272.386	187.214	-1737.862	76.655	-1983.010	-1802.905	-1557.518	90.396
	1000.00	131.795	286.252	196.437	-1724.702	89.815	-2010.954	-1801.271	-1530.342	79.937
	1100.00	132.096	298.828	205.182	-1711.507	103.010	-2040.217	-1819.106	-1503.037	71.373
	1200.00	132.332	310.332	213.472	-1698.285	116.232	-2070.684	-1818.563	-1474.328	64.176
	1300.00	132.521	320.932	221.336	-1685.042	129.475	-2102.254	-1818.050	-1445.663	58.087
	1365.00	132.625	327.401	226.234	-1676.424	138.093	-2123.326	-1817.732	-1427.052	54.609
			0.460		0.628					
SOL-B	1365.00	134.516	327.861	226.234	-1675.796	138.721	-2123.326	-1817.104	-1427.052	54.609
	1400.00	134.516	331.266	228.817	-1671.088	143.429	-2134.861	-1816.872	-1417.053	52.871
	1500.00	134.516	340.547	235.960	-1657.637	156.880	-2168.457	-2072.674	-1382.717	48.150
	1600.00	134.516	349.228	242.771	-1644.185	170.332	-2202.951	-2068.880	-1336.843	43.643
	1700.00	134.516	357.383	249.275	-1630.734	183.783	-2238.285	-2065.124	-1291.206	39.674
	1800.00	134.516	365.072	255.497	-1617.282	197.235	-2274.412	-2061.403	-1245.789	36.152
	1900.00	134.516	372.345	261.457	-1603.831	210.686	-2311.286	-2057.718	-1200.578	33.006
	2000.00	134.516	379.245	267.176	-1590.379	224.138	-2348.868	-2054.068	-1155.560	30.180

References

Phase	H / S	C _p
SOL-A	Nb1	Pa1
SOL-B	Pa1	Pa1

65.390

ZINC

Zn

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [—]
SOL	298.15	25.402	41.631	41.631	0.000	0.000	-12.412	0.000	0.000	0.000
	300.00	25.414	41.788	41.631	0.047	0.047	-12.489	0.000	0.000	0.000
	400.00	26.260	49.207	42.637	2.628	2.628	-17.055	0.000	0.000	0.000
	500.00	27.324	55.178	44.566	5.306	5.306	-22.283	0.000	0.000	0.000
	600.00	28.473	60.261	46.769	8.095	8.095	-28.061	0.000	0.000	0.000
	692.65	29.575	64.427	48.857	10.784	10.784	-33.841	0.000	0.000	0.000
LIQ			10.571		7.322					
	692.65	31.380	74.998	48.857	18.106	18.106	-33.841	0.000	0.000	0.000
	700.00	31.380	75.329	49.133	18.337	18.337	-34.393	0.000	0.000	0.000
	800.00	31.380	79.519	52.675	21.475	21.475	-42.140	0.000	0.000	0.000
	900.00	31.380	83.215	55.867	24.613	24.613	-50.280	0.000	0.000	0.000
	1000.00	31.380	86.521	58.770	27.751	27.751	-58.770	0.000	0.000	0.000
	1100.00	31.380	89.512	61.431	30.889	30.889	-67.574	0.000	0.000	0.000
	1179.00	31.380	91.688	63.386	33.368	33.368	-74.733	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
SOL	Hu1	Hu1	Hu1 MPT= 692.655
LIQ	Hu1	Hu1	BPT= 1179., L= 115.33 kJ

Zn[g]

ZINC (GAS)

65.390

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]		[—————]		[————— kJ / mol —————]				[-]
GAS	298.15	20.786	160.984	160.984	130.415	0.000	82.418	130.415	94.830	-16.614
	300.00	20.786	161.113	160.985	130.453	0.038	82.120	130.406	94.609	-16.473
	400.00	20.786	167.093	161.800	132.532	2.117	65.695	129.904	82.750	-10.806
	500.00	20.786	171.731	163.340	134.611	4.196	48.745	129.305	71.028	-7.420
	600.00	20.786	175.521	165.063	136.689	6.274	31.377	128.594	59.438	-5.175
	700.00	20.786	178.725	166.792	138.768	8.353	13.661	120.431	48.054	-3.586
	800.00	20.786	181.500	168.461	140.847	10.432	-4.354	119.372	37.786	-2.467
	900.00	20.786	183.949	170.049	142.925	12.510	-22.629	118.312	27.652	-1.605
	1000.00	20.786	186.139	171.550	145.004	14.589	-41.135	117.253	17.635	-0.921
	1100.00	20.786	188.120	172.968	147.082	16.667	-59.849	116.193	7.725	-0.367
	1200.00	20.786	189.928	174.307	149.161	18.746	-78.753	0.000	0.000	0.000
	1300.00	20.786	191.592	175.573	151.240	20.825	-97.830	0.000	0.000	0.000
	1400.00	20.786	193.133	176.773	153.318	22.903	-117.068	0.000	0.000	0.000
	1500.00	20.786	194.567	177.912	155.397	24.982	-136.453	0.000	0.000	0.000
	1600.00	20.786	195.908	178.995	157.475	27.060	-155.978	0.000	0.000	0.000
	1700.00	20.786	197.168	180.028	159.554	29.139	-175.632	0.000	0.000	0.000
	1800.00	20.786	198.356	181.013	161.633	31.218	-195.409	0.000	0.000	0.000
	1900.00	20.786	199.480	181.956	163.711	33.296	-215.301	0.000	0.000	0.000
	2000.00	20.786	200.547	182.859	165.790	35.375	-235.303	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Hu1	Hu1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [————— kJ / mol —————]	H–H298	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL–3	298.15	125.233	168.038	168.038	–133.888	0.000	–183.988	–133.888	–125.460	21.980
	300.00	125.311	168.813	168.040	–133.656	0.232	–184.300	–133.889	–125.408	21.835
	400.00	129.495	205.435	173.005	–120.916	12.972	–203.090	–133.904	–122.578	16.007
	463.00	132.131	224.564	178.747	–112.675	21.213	–216.648	–133.908	–120.794	13.628
			0.000		0.000					
SOL–2	463.00	132.131	224.564	178.747	–112.675	21.213	–216.648	–133.908	–120.794	13.628
	500.00	133.679	234.781	182.519	–107.757	26.131	–225.148	–133.913	–119.746	12.510
	600.00	137.863	259.523	193.343	–94.180	39.708	–249.894	–133.949	–116.910	10.178
	700.00	142.047	281.089	204.370	–80.185	53.703	–276.947	–156.034	–113.831	8.494
	800.00	146.231	300.330	215.183	–65.771	68.117	–306.035	–156.498	–107.767	7.036
	900.00	150.415	317.795	225.629	–50.939	82.949	–336.954	–156.645	–101.663	5.900
	965.00	153.134	328.378	232.196	–41.073	92.815	–357.958	–156.548	–97.695	5.288
			0.000		0.000					
SOL–1	965.00	153.134	328.378	232.196	–41.073	92.815	–357.958	–156.548	–97.695	5.288
	1000.00	153.134	333.833	235.659	–35.714	98.174	–369.547	–156.453	–95.562	4.992
	1100.00	153.134	348.429	245.258	–20.400	113.488	–403.671	–156.228	–89.484	4.249
	1200.00	153.134	361.753	254.419	–5.087	128.801	–439.190	–501.632	–77.151	3.358
	1218.00	153.134	364.033	256.022	–2.330	131.558	–445.722	–501.109	–70.788	3.036
			127.100		154.808					
LIQ	1218.00	154.808	491.133	256.022	152.478	286.366	–445.722	–346.301	–70.788	3.036
	1300.00	154.808	501.220	271.173	165.172	299.060	–486.413	–344.084	–52.316	2.102
	1400.00	154.808	512.692	288.020	180.653	314.541	–537.116	–342.395	–29.944	1.117
	1500.00	154.808	523.373	303.358	196.134	330.022	–588.925	–535.384	5.216	–0.182

References

Phase	H / S	C _p	Remarks
SOL–3	Tk1	e	Tk1 TPT= 463.
SOL–2	u	e	Tk1 TPT= 965.
SOL–1	u	e	
LIQ	Tk1	e	

Zn3(AsO4)2

ZINC ARSENATE

474.008

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	255.279	281.918	281.918	-2134.744	0.000	-2218.798	-2134.744	-1915.611	335.607
	300.00	255.945	283.499	281.923	-2134.271	0.473	-2219.321	-2134.721	-1914.252	333.301
	400.00	281.754	361.055	292.322	-2107.251	27.493	-2251.673	-2132.340	-1841.069	240.419
	500.00	297.369	425.714	312.717	-2078.246	56.498	-2291.102	-2128.739	-1768.653	184.770
	600.00	308.973	480.996	336.267	-2047.907	86.837	-2336.504	-2124.651	-1697.014	147.738
	700.00	318.682	529.370	360.469	-2016.513	118.231	-2387.072	-2142.356	-1625.846	121.322
	800.00	327.382	572.501	384.325	-1984.204	150.540	-2442.204	-2138.273	-1552.332	101.357
	900.00	335.495	611.534	407.436	-1951.056	183.688	-2501.436	-2133.726	-1479.358	85.860
	979.00	341.639	640.017	425.067	-1924.308	210.436	-2550.885	-2129.775	-1422.085	75.875

References

Phase	H / S	C _p
SOL	G1	G1

ZnBr2

ZINC BROMIDE

225.198

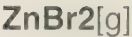
Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	65.692	135.980	135.980	-329.700	0.000	-370.242	-329.700	-312.449	54.740
	300.00	65.772	136.387	135.981	-329.578	0.122	-370.494	-329.765	-312.342	54.384
	400.00	70.124	155.904	138.613	-322.784	6.916	-385.145	-360.034	-300.274	39.212
	500.00	74.475	172.019	143.726	-315.554	14.146	-401.563	-359.174	-285.427	29.818
	600.00	78.827	185.982	149.630	-307.889	21.811	-419.478	-358.017	-270.782	23.574
	675.15	82.097	195.473	154.211	-301.842	27.858	-433.816	-356.949	-259.918	20.109
			23.177		15.648					
LIQ	675.15	113.805	218.650	154.211	-286.194	43.506	-433.816	-341.301	-259.918	20.109
	700.00	113.805	222.764	156.572	-283.366	46.334	-439.301	-347.471	-256.866	19.168
	800.00	113.805	237.960	165.817	-271.985	57.715	-462.354	-342.976	-244.229	15.947
	900.00	113.805	251.365	174.592	-260.605	69.095	-486.833	-338.491	-232.155	13.474
	943.00	113.805	256.676	178.215	-255.711	73.989	-497.757	-336.565	-227.120	12.581

References

Phase	H / S	C _p	Remarks
SOL	Tk1	Ku1	
LIQ	Tk1	Ku1	Tk1 NBPT= 943., L= 109.6 kJ

225.198

ZINC BROMIDE (GAS)



Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
kJ / mol										
GAS	298.15	59.147	300.520	300.520	–185.770	0.000	–275.370	–185.770	–217.576	38.118
	300.00	59.199	300.886	300.521	–185.661	0.109	–275.926	–185.848	–217.774	37.918
	400.00	61.032	318.205	302.870	–179.636	6.134	–306.918	–216.886	–222.047	28.996
	500.00	61.880	331.926	307.357	–173.486	12.284	–339.448	–217.106	–223.312	23.329
	600.00	62.341	343.252	312.423	–167.272	18.498	–373.224	–217.400	–224.528	19.547
	700.00	62.619	352.885	317.533	–161.023	24.747	–408.043	–225.128	–225.608	16.835
	800.00	62.799	361.259	322.486	–154.752	31.018	–443.759	–225.742	–225.635	14.732
	900.00	62.923	368.663	327.214	–148.466	37.304	–480.262	–226.351	–225.585	13.093
	1000.00	63.011	375.298	331.696	–142.169	43.601	–517.466	–226.958	–225.467	11.777
	1100.00	63.076	381.306	335.937	–135.864	49.906	–555.301	–227.565	–225.288	10.698
	1200.00	63.126	386.797	339.950	–129.554	56.216	–593.710	–343.306	–222.965	9.705
	1300.00	63.165	391.851	343.751	–123.239	62.531	–632.646	–342.855	–212.955	8.557
	1400.00	63.196	396.533	347.356	–116.921	68.849	–672.068	–342.407	–202.980	7.573
	1500.00	63.220	400.894	350.781	–110.600	75.170	–711.942	–341.962	–193.036	6.722
	1600.00	63.241	404.975	354.042	–104.277	81.493	–752.238	–341.520	–183.122	5.978
	1700.00	63.258	408.810	357.152	–97.952	87.818	–792.929	–341.082	–173.236	5.323
	1800.00	63.272	412.426	360.123	–91.626	94.144	–833.992	–340.647	–163.375	4.741
	1900.00	63.284	415.847	362.967	–85.298	100.472	–875.407	–340.216	–153.539	4.221
	2000.00	63.294	419.093	365.693	–78.969	106.801	–917.156	–339.788	–143.724	3.754

References

Phase	H / S	C _p
GAS	Tk1	e

125.399

ZINC CARBONATE



Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
kJ / mol										
SOL	298.15	80.077	82.400	82.400	–812.780	0.000	–837.347	–812.780	–731.477	128.152
	300.00	80.333	82.896	82.401	–812.632	0.148	–837.500	–812.776	–730.972	127.274
	400.00	94.140	107.897	85.717	–803.908	8.872	–847.067	–812.127	–703.779	91.904
	500.00	107.947	130.387	92.434	–793.804	18.976	–858.997	–810.620	–676.848	70.710

References

Phase	H / S	C _p
SOL	Nb1	Ku1

ZnCl2

ZINC CHLORIDE

136.295

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	71.338	111.462	111.462	-415.053	0.000	-448.285	-415.053	-369.351	64.709
	300.00	71.412	111.903	111.463	-414.921	0.132	-448.492	-415.031	-369.067	64.260
	400.00	74.758	132.931	114.308	-407.604	7.449	-460.776	-413.761	-353.934	46.219
	500.00	77.437	149.908	119.783	-399.991	15.062	-474.945	-412.398	-339.134	35.429
	590.00	79.620	162.902	125.392	-392.922	22.131	-489.034	-411.104	-326.055	28.867
LIQ			17.375		10.251					
	590.00	79.481	180.277	125.392	-382.671	32.382	-489.034	-400.853	-326.055	28.867
	600.00	79.713	181.615	126.318	-381.875	33.178	-490.844	-400.707	-324.789	28.275
	700.00	82.026	194.076	135.126	-373.788	41.265	-509.641	-406.538	-312.176	23.295
	800.00	84.339	205.180	143.201	-365.470	49.583	-529.614	-405.063	-298.794	19.509
	900.00	86.651	215.247	150.656	-356.920	58.133	-550.643	-403.377	-285.609	16.576
	999.50	88.953	224.452	157.550	-348.184	66.869	-572.524	-401.486	-272.688	14.251

References

Phase	H / S	C _p	Remarks
SOL	Nb1,Tk1	Pa2	
LIQ	Tk1	Pa2	e BPT= 999.5, L= 125.08 kJ

ZnCl2[g]

ZINC CHLORIDE (GAS)

136.295

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	56.902	276.672	276.672	-265.684	0.000	-348.174	-265.684	-269.239	47.170
	300.00	56.969	277.024	276.673	-265.579	0.105	-348.686	-265.688	-269.261	46.883
	400.00	59.310	293.782	278.942	-259.748	5.936	-377.261	-265.906	-270.419	35.313
	500.00	60.394	307.146	283.292	-253.757	11.927	-407.330	-266.164	-271.519	28.365
	600.00	60.982	318.214	288.217	-247.685	17.999	-438.614	-266.517	-272.559	23.728
	700.00	61.337	327.644	293.192	-241.568	24.116	-470.918	-274.318	-273.453	20.405
	800.00	61.568	335.850	298.023	-235.422	30.262	-504.102	-275.015	-273.282	17.843
	900.00	61.726	343.111	302.637	-229.257	36.427	-538.057	-275.714	-273.023	15.846
	1000.00	61.839	349.621	307.015	-223.078	42.606	-572.699	-276.414	-272.687	14.244
	1100.00	61.922	355.519	311.161	-216.890	48.794	-607.961	-277.118	-272.280	12.929
	1200.00	61.986	360.910	315.085	-210.695	54.989	-643.786	-392.958	-269.720	11.741
	1300.00	62.035	365.873	318.804	-204.493	61.191	-680.129	-392.609	-259.464	10.425
	1400.00	62.074	370.472	322.332	-198.288	67.396	-716.949	-392.263	-249.235	9.299
	1500.00	62.106	374.756	325.686	-192.079	73.605	-754.212	-391.921	-239.031	8.324
	1600.00	62.132	378.765	328.879	-185.867	79.817	-791.891	-391.584	-228.849	7.471
	1700.00	62.153	382.532	331.926	-179.653	86.031	-829.957	-391.251	-218.688	6.719
	1800.00	62.171	386.085	334.837	-173.436	92.248	-868.390	-390.924	-208.547	6.052
	1900.00	62.187	389.447	337.623	-167.218	98.466	-907.168	-390.602	-198.424	5.455
	2000.00	62.200	392.637	340.295	-160.999	104.685	-946.274	-390.286	-188.318	4.918

References

Phase	H / S	C _p
GAS	Tk1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [– –]
SOL–A	298.15	65.647	73.680	73.680	–764.417	0.000	–786.385	–764.417	–713.509	125.004
	300.00	65.775	74.087	73.681	–764.295	0.122	–786.521	–764.400	–713.193	124.178
	400.00	71.075	93.796	76.333	–757.432	6.985	–794.950	–763.331	–696.278	90.925
	500.00	74.785	110.071	81.500	–750.131	14.286	–805.167	–762.072	–679.657	71.003
	600.00	77.869	123.985	87.448	–742.495	21.922	–816.886	–760.698	–663.302	57.746
	700.00	80.659	136.201	93.558	–734.567	29.850	–829.907	–766.562	–647.106	48.288
	800.00	83.290	147.144	99.584	–726.369	38.048	–844.084	–765.107	–630.138	41.144
	900.00	85.830	157.102	105.429	–717.912	46.505	–859.303	–763.437	–613.365	35.599
	1000.00	88.314	166.274	111.061	–709.204	55.213	–875.478	–761.547	–596.790	31.173
	1090.00	90.517	173.978	115.941	–701.157	63.260	–890.793	–759.659	–582.043	27.892
SOL–B			2.879		3.138					
	1090.00	90.772	176.857	115.941	–698.019	66.398	–890.793	–756.521	–582.043	27.892
	1100.00	91.040	177.687	116.499	–697.110	67.307	–892.566	–756.297	–580.443	27.563
	1200.00	93.713	185.723	121.936	–687.872	76.545	–910.740	–869.060	–562.470	24.484
	1220.00	94.248	187.277	122.994	–685.993	78.424	–914.470	–868.344	–557.366	23.864
LIQ			32.717		39.915					
	1220.00	100.416	219.994	122.994	–646.078	118.339	–914.470	–828.429	–557.366	23.864
	1300.00	100.416	226.372	129.162	–638.044	126.373	–932.327	–825.057	–539.699	21.685
	1400.00	100.416	233.813	136.375	–628.003	136.414	–955.341	–820.857	–517.906	19.323
	1500.00	100.416	240.741	143.104	–617.961	146.456	–979.073	–816.671	–496.413	17.287
	1600.00	100.416	247.222	149.411	–607.919	156.498	–1003.475	–812.498	–475.199	15.514
	1700.00	100.416	253.310	155.346	–597.878	166.539	–1028.504	–808.336	–454.245	13.957
	1776.30	100.416	257.718	159.649	–590.216	174.201	–1048.001	–805.169	–438.423	12.892

References

Phase	H / S	C _p	Remarks
SOL–A	Nb1,Tk1	Pa2	
SOL–B	Pa2	Pa2	
LIQ	Pa2	Pa2	Tk1 BPT= 1776., L= 184.9 kJ

ZnF2[g]

ZINC FLUORIDE (GAS)

103.387

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	51.882	254.500	254.500	-494.520	0.000	-570.399	-494.520	-497.524	87.164
	300.00	52.033	254.821	254.501	-494.424	0.096	-570.870	-494.529	-497.542	86.630
	400.00	57.360	270.627	256.620	-488.917	5.603	-597.168	-494.816	-498.496	65.097
	500.00	59.881	283.728	260.771	-483.042	11.478	-624.905	-494.982	-499.396	52.172
	600.00	61.298	294.781	265.542	-476.977	17.543	-653.845	-495.180	-500.261	43.552
	700.00	62.194	304.303	270.415	-470.799	23.721	-683.811	-502.794	-501.010	37.386
	800.00	62.811	312.650	275.184	-464.547	29.973	-714.667	-503.286	-500.721	32.694
	900.00	63.268	320.076	279.767	-458.242	36.278	-746.310	-503.767	-500.372	29.041
	1000.00	63.624	326.761	284.137	-451.897	42.623	-778.657	-504.240	-499.969	26.116
	1100.00	63.914	332.839	288.293	-445.519	49.001	-811.642	-504.707	-499.519	23.720
	1200.00	64.159	338.411	292.240	-439.115	55.405	-845.208	-620.303	-496.938	21.631
	1300.00	64.374	343.555	295.992	-432.689	61.831	-879.310	-619.701	-486.682	19.555
	1400.00	64.565	348.333	299.562	-426.242	68.278	-913.907	-619.096	-476.472	17.777
	1500.00	64.739	352.793	302.964	-419.776	74.744	-948.966	-618.486	-466.306	16.238
	1600.00	64.901	356.977	306.210	-413.294	81.226	-984.457	-617.872	-456.181	14.893
	1700.00	65.053	360.916	309.314	-406.796	87.724	-1020.353	-617.255	-446.094	13.707
	1800.00	65.197	364.638	312.285	-400.284	94.236	-1056.632	-616.633	-436.044	12.654
	1900.00	65.335	368.167	315.134	-393.757	100.763	-1093.274	-616.008	-426.028	11.712
	2000.00	65.467	371.522	317.870	-387.217	107.303	-1130.260	-615.379	-416.045	10.866

References

Phase	H / S	C _p
GAS	Tk1,e	Tk1,e

ZnI2

ZINC IODIDE

319.199

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	65.692	161.500	161.500	-208.150	0.000	-256.301	-208.150	-209.261	36.662
	300.00	65.772	161.907	161.501	-208.028	0.122	-256.600	-208.176	-209.268	36.437
	400.00	70.124	181.424	164.133	-201.234	6.916	-273.803	-225.601	-208.863	27.275
	500.00	74.475	197.539	169.246	-194.004	14.146	-292.773	-269.243	-200.466	20.943
	600.00	78.827	211.502	175.150	-186.339	21.811	-313.240	-268.118	-186.811	16.263
	700.00	83.178	223.980	181.249	-178.238	29.912	-335.024	-274.022	-173.291	12.931
	719.00	84.005	226.219	182.408	-176.650	31.500	-339.301	-273.746	-170.561	12.391
			23.277		16.736					
LIQ	719.00	87.864	249.496	182.408	-159.914	48.236	-339.301	-257.010	-170.561	12.391
	800.00	87.864	258.875	189.684	-152.797	55.353	-359.897	-255.491	-160.904	10.506
	900.00	87.864	269.224	197.958	-144.011	64.139	-386.312	-253.623	-149.193	8.659
	1000.00	87.864	278.481	205.556	-135.224	72.926	-413.706	-251.762	-137.690	7.192
	1022.84	87.864	280.466	207.206	-133.217	74.933	-420.089	-251.338	-135.089	6.899

References

Phase	H / S	C _p	Remarks
SOL	Tk1	e	
LIQ	Tk1	e	BPT= 1022.84, L= 109.732 kJ

319.199

ZINC IODIDE (GAS)

ZnI2[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
GAS	298.15	54.886	316.800	316.800	-65.438	0.000	-159.892	-65.438	-112.852	19.771
	300.00	54.938	317.140	316.801	-65.336	0.102	-160.478	-65.484	-113.146	19.700
	400.00	56.771	333.233	318.983	-59.738	5.700	-193.031	-84.105	-128.091	16.727
	500.00	57.619	346.003	323.154	-54.014	11.424	-227.015	-129.253	-134.708	14.073
	600.00	58.080	356.553	327.867	-48.227	17.211	-262.158	-130.006	-135.730	11.816
	700.00	58.358	365.528	332.622	-42.404	23.034	-298.273	-138.188	-136.540	10.189
	800.00	58.538	373.333	337.234	-36.558	28.880	-335.225	-139.252	-136.232	8.895
	900.00	58.662	380.236	341.636	-30.698	34.740	-372.910	-140.310	-135.791	7.881
	1000.00	58.750	386.421	345.810	-24.827	40.611	-411.248	-141.365	-135.232	7.064
	1100.00	58.815	392.024	349.761	-18.949	46.489	-450.175	-142.419	-134.568	6.390
	1200.00	58.865	397.144	353.499	-13.065	52.373	-489.637	-258.609	-131.718	5.734
	1300.00	58.904	401.857	357.040	-7.176	58.262	-529.590	-258.606	-121.144	4.868
	1400.00	58.935	406.223	360.399	-1.284	64.154	-569.997	-258.607	-110.570	4.125
	1500.00	58.959	410.290	363.591	4.611	70.049	-610.825	-258.611	-99.996	3.482
	1600.00	58.980	414.096	366.630	10.508	75.946	-652.046	-258.618	-89.421	2.919
	1700.00	58.997	417.672	369.528	16.406	81.844	-693.636	-258.630	-78.846	2.423
	1800.00	59.011	421.045	372.298	22.307	87.745	-735.574	-258.647	-68.270	1.981
	1900.00	59.023	424.236	374.948	28.209	93.647	-777.839	-258.668	-57.693	1.586
	2000.00	59.033	427.263	377.489	34.111	99.549	-820.415	-258.693	-47.115	1.231

References

Phase	H / S	C _p
GAS	Tk1	e

224.183

ZINC NITRIDE

Zn3N2

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
SOL	298.15	109.334	108.784	108.784	-22.602	0.000	-55.036	-22.602	39.329	-6.890
	300.00	109.495	109.461	108.786	-22.400	0.202	-55.238	-22.594	39.713	-6.915
	400.00	118.198	142.153	113.185	-11.015	11.587	-67.876	-21.870	60.390	-7.886
	500.00	126.901	169.463	121.778	1.240	23.842	-83.491	-20.589	80.817	-8.443
	600.00	135.603	193.369	131.756	14.365	36.967	-101.656	-18.815	100.940	-8.788
	700.00	144.306	214.925	142.122	28.361	50.963	-122.087	-38.587	120.962	-9.026

References

Phase	H / S	C _p
SOL	Nb1/Pa3	Pa3

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	41.086	43.639	43.639	-350.460	0.000	-363.471	-350.460	-320.476	56.146
	300.00	41.179	43.894	43.640	-350.384	0.076	-363.552	-350.458	-320.290	55.768
	400.00	44.684	56.277	45.305	-346.071	4.389	-368.582	-350.212	-310.265	40.517
	500.00	46.698	66.480	48.550	-341.495	8.965	-374.735	-349.843	-300.321	31.374
	600.00	48.125	75.126	52.277	-336.750	13.710	-381.826	-349.468	-290.452	25.286
	700.00	49.274	82.633	56.089	-331.879	18.581	-389.722	-356.465	-280.565	20.936
	800.00	50.276	89.280	59.830	-326.900	23.560	-398.324	-356.293	-269.734	17.612
	900.00	51.192	95.255	63.440	-321.826	28.634	-407.556	-356.060	-258.927	15.028
	1000.00	52.055	100.694	66.897	-316.664	33.796	-417.357	-355.766	-248.150	12.962
	1100.00	52.883	105.694	70.200	-311.417	39.043	-427.680	-355.412	-237.405	11.273
	1200.00	53.687	110.330	73.353	-306.088	44.372	-438.484	-470.129	-224.605	9.777
	1300.00	54.475	114.659	76.366	-300.680	49.780	-449.736	-468.591	-204.207	8.205
	1400.00	55.250	118.724	79.248	-295.193	55.267	-461.407	-466.990	-183.930	6.862
	1500.00	56.017	122.562	82.009	-289.630	60.830	-473.473	-465.326	-163.769	5.703
	1600.00	56.776	126.202	84.658	-283.990	66.470	-485.913	-463.598	-143.721	4.692
	1700.00	57.531	129.666	87.205	-278.275	72.185	-498.708	-461.808	-123.783	3.803
	1800.00	58.281	132.976	89.656	-272.484	77.976	-511.841	-459.954	-103.952	3.017
	1900.00	59.028	136.147	92.020	-266.619	83.841	-525.298	-458.036	-84.226	2.316
	2000.00	59.772	139.194	94.303	-260.679	89.781	-539.066	-456.056	-64.603	1.687
	2100.00	60.514	142.128	96.511	-254.664	95.796	-553.133	-454.013	-45.081	1.121
	2200.00	61.255	144.960	98.649	-248.576	101.884	-567.489	-451.908	-25.657	0.609
	2248.00	61.609	146.286	99.652	-245.627	104.833	-574.479	-450.875	-16.368	0.380
LIQ			24.196		54.392					
	2248.00	60.668	170.482	99.652	-191.235	159.225	-574.479	-396.483	-16.368	0.380
	2300.00	60.668	171.869	101.270	-188.080	162.380	-583.380	-395.406	-7.587	0.172
	2400.00	60.668	174.451	104.265	-182.014	168.446	-600.697	-393.344	9.230	-0.201
	2500.00	60.668	176.928	107.123	-175.947	174.513	-618.267	-391.293	25.962	-0.542

References

Phase	H / S	C _p	Remarks
SOL	Co1	Pa1	Ku1,Tk1 MPT= 2248.
LIQ	e	e	

404.297

TRIZINC DISULFATE OXIDE

Zn3O(SO4)2

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
kJ / mol										
SOL	298.15	246.856	290.579	290.579	–2366.742	0.000	–2453.378	–2366.742	–2121.786	371.728
	300.00	247.532	292.108	290.584	–2366.285	0.457	–2453.917	–2366.755	–2120.266	369.171
	400.00	278.387	367.833	300.698	–2339.888	26.854	–2487.021	–2370.633	–2037.949	266.129
	500.00	298.556	432.279	320.734	–2310.970	55.772	–2527.109	–2371.319	–1954.718	204.208
	600.00	312.310	487.997	344.075	–2280.388	86.354	–2573.187	–2370.475	–1871.451	162.924
	700.00	322.655	536.948	368.202	–2248.620	118.122	–2624.484	–2390.696	–1788.182	133.436
	800.00	331.193	580.605	392.073	–2215.917	150.825	–2680.400	–2389.143	–1702.213	111.143
	900.00	338.746	620.057	415.247	–2182.414	184.328	–2740.465	–2492.791	–1614.151	93.683
	1000.00	345.724	656.112	437.557	–2148.186	218.556	–2804.299	–2487.227	–1516.818	79.230
	1100.00	352.306	689.375	458.957	–2113.282	253.460	–2871.594	–2481.213	–1420.065	67.433
	1200.00	358.544	720.299	479.462	–2077.736	289.006	–2942.096	–2820.150	–1317.611	57.354

References

Phase	H / S	C _p
SOL	Pa3	Pa3

141.474

ZINC METASILICATE

ZnSiO3

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
kJ / mol										
SOL	298.15	84.762	89.538	89.538	–1262.572	0.000	–1289.268	–1262.572	–1179.497	206.643
	300.00	84.852	90.062	89.539	–1262.415	0.157	–1289.434	–1262.581	–1178.982	205.279
	400.00	89.705	115.137	92.925	–1253.687	8.885	–1299.742	–1263.013	–1151.048	150.311
	500.00	94.558	135.676	99.480	–1244.474	18.098	–1312.312	–1263.345	–1123.016	117.321
	600.00	99.412	153.345	107.017	–1234.776	27.796	–1326.782	–1263.552	–1094.929	95.322
	700.00	104.265	169.034	114.776	–1224.592	37.980	–1342.915	–1270.940	–1066.741	79.601
	800.00	109.119	183.273	122.461	–1213.923	48.649	–1360.541	–1270.923	–1037.567	67.746
	900.00	113.972	196.406	129.957	–1202.768	59.804	–1379.533	–1270.576	–1008.415	58.527
	1000.00	118.826	208.665	137.221	–1191.128	71.444	–1399.793	–1269.876	–979.320	51.154
	1100.00	123.679	220.218	144.246	–1179.003	83.569	–1421.243	–1268.808	–950.313	45.127
	1200.00	128.532	231.187	151.038	–1166.392	96.180	–1443.817	–1382.492	–919.330	40.017
	1300.00	133.386	241.667	157.609	–1153.296	109.276	–1467.464	–1379.591	–880.849	35.393
	1400.00	138.239	251.730	163.975	–1139.715	122.857	–1492.137	–1376.292	–842.605	31.438
	1500.00	143.093	261.433	170.150	–1125.649	136.923	–1517.798	–1372.591	–804.611	28.019
	1600.00	147.946	270.823	176.151	–1111.097	151.475	–1544.413	–1368.484	–766.878	25.036
	1700.00	152.800	279.938	181.989	–1096.059	166.513	–1571.953	–1414.146	–728.966	22.398

References

Phase	H / S	C _p
SOL	S5	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	121.830	131.378	131.378	-1644.412	0.000	-1683.582	-1644.412	-1530.818	268.193
	300.00	122.317	132.133	131.380	-1644.186	0.226	-1683.826	-1644.426	-1530.113	266.416
	400.00	140.737	170.147	136.438	-1630.928	13.484	-1698.987	-1644.394	-1491.977	194.832
	500.00	151.247	202.766	146.524	-1616.291	28.121	-1717.674	-1643.510	-1453.964	151.895
	600.00	158.644	231.026	158.305	-1600.780	43.632	-1739.395	-1642.273	-1416.167	123.288
	700.00	164.571	255.939	170.508	-1584.610	59.802	-1763.768	-1655.545	-1378.437	102.860
	800.00	169.715	278.257	182.606	-1567.891	76.521	-1790.497	-1654.284	-1338.932	87.423
	900.00	174.402	298.521	194.377	-1550.683	93.729	-1819.351	-1652.724	-1299.604	75.427
	1000.00	178.807	317.126	205.734	-1533.020	111.392	-1850.146	-1650.871	-1260.465	65.840
	1100.00	183.028	334.367	216.653	-1514.927	129.485	-1882.731	-1648.727	-1221.526	58.005
	1200.00	187.122	350.469	227.141	-1496.419	147.993	-1916.981	-1876.560	-1178.616	51.304
	1300.00	191.128	365.605	237.216	-1477.506	166.906	-1952.792	-1871.712	-1120.648	45.028
	1400.00	195.069	379.914	246.902	-1458.195	186.217	-1990.075	-1866.569	-1063.065	39.663
	1500.00	198.963	393.505	256.226	-1438.493	205.919	-2028.751	-1861.132	-1005.860	35.027
	1600.00	202.820	406.469	265.214	-1418.404	226.008	-2068.755	-1855.399	-949.027	30.983
	1700.00	206.650	418.880	273.891	-1397.930	246.482	-2110.027	-1899.550	-892.115	27.411
	1785.00	209.888	429.041	281.038	-1380.227	264.185	-2146.066	-1894.007	-841.879	24.636
LIQ			46.880		83.680					
	1785.00	213.384	475.921	281.038	-1296.547	347.865	-2146.066	-1810.327	-841.879	24.636
	1800.00	213.384	477.706	282.670	-1293.347	351.065	-2153.218	-1809.275	-833.745	24.195
	1900.00	213.384	489.243	293.241	-1272.008	372.404	-2201.570	-1802.293	-779.739	21.437
	2000.00	213.384	500.188	303.317	-1250.670	393.742	-2251.047	-1795.356	-726.100	18.964

References

Phase	H / S	C _p	Remarks
SOL	S5	S5	S5
LIQ	e		MPT= 1785.

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f kJ / mol	ΔG _f kJ / mol	log K _f [—]
SOL	298.15	137.319	143.101	143.101	-1652.061	0.000	-1694.727	-1652.061	-1538.402	269.522
	300.00	137.807	143.952	143.104	-1651.807	0.254	-1694.992	-1652.056	-1537.697	267.737
	400.00	155.765	186.378	148.766	-1637.016	15.045	-1711.568	-1650.958	-1499.706	195.842
	500.00	165.322	222.253	159.974	-1620.922	31.139	-1732.048	-1649.038	-1462.106	152.745
	600.00	171.573	252.980	172.977	-1604.059	48.002	-1755.847	-1646.859	-1424.923	124.051
	700.00	176.262	279.794	186.361	-1586.658	65.403	-1782.514	-1659.322	-1387.953	103.570
	800.00	180.119	303.589	199.555	-1568.834	83.227	-1811.705	-1657.419	-1349.314	88.101
	900.00	183.492	325.003	212.324	-1550.650	101.411	-1843.153	-1655.403	-1310.921	76.084
	1000.00	186.565	344.497	224.581	-1532.146	119.915	-1876.642	-1653.292	-1272.758	66.482
	1100.00	189.441	362.414	236.308	-1513.344	138.717	-1912.000	-1651.091	-1234.810	58.636
	1200.00	192.184	379.016	247.517	-1494.262	157.799	-1949.081	-1883.062	-1192.769	51.920
	1300.00	194.832	394.504	258.234	-1474.910	177.151	-1987.766	-1878.020	-1135.449	45.623
	1400.00	197.412	409.038	268.492	-1455.298	196.763	-2027.950	-1872.840	-1078.521	40.240
	1500.00	199.942	422.744	278.323	-1435.430	216.631	-2069.546	-1867.530	-1021.969	35.588
	1600.00	202.433	435.728	287.759	-1415.311	236.750	-2112.475	-1862.096	-965.774	31.529
	1700.00	204.894	448.074	296.829	-1394.944	257.117	-2156.670	-1856.548	-909.924	27.959
	1800.00	207.332	459.855	305.561	-1374.332	277.729	-2202.071	-1850.894	-854.402	24.794
	1900.00	209.752	471.129	313.981	-1353.478	298.583	-2248.624	-1845.138	-799.198	21.971
	2000.00	212.157	481.950	322.110	-1332.383	319.678	-2296.282	-1853.417	-743.855	19.427

References

Phase	H / S	C _p
SOL	Nb1	Ku1,e

Phase	T [K]	C _p [	S J / (K mol)	-(G-H298)/T]	H [	H-H298 kJ / mol	G]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	73.184	60.250	60.250	-101.671	0.000	-119.634	-101.671	-82.732	14.494
	300.00	73.253	60.703	60.251	-101.536	0.135	-119.746	-101.671	-82.615	14.384
	400.00	76.248	82.213	63.164	-94.051	7.620	-126.936	-103.270	-75.883	9.909
	500.00	78.534	99.481	68.756	-86.309	15.362	-136.049	-103.471	-69.010	7.209
	600.00	80.540	113.979	75.117	-78.353	23.318	-146.741	-103.570	-62.107	5.407
	700.00	82.414	126.536	81.585	-70.205	31.466	-158.780	-110.929	-55.116	4.113
	800.00	84.217	137.660	87.912	-61.873	39.798	-172.001	-111.000	-47.136	3.078
	900.00	85.980	147.681	94.005	-53.363	48.308	-186.276	-110.893	-39.157	2.273
	1000.00	87.718	156.830	99.837	-44.678	56.993	-201.508	-110.611	-31.200	1.630
	1100.00	89.438	165.271	105.407	-35.820	65.851	-217.618	-110.156	-23.280	1.105
	1200.00	91.148	173.127	110.726	-26.790	74.881	-234.543	-351.806	-11.140	0.485
	1258.00	92.136	177.452	113.704	-21.475	80.196	-244.710	-349.850	5.279	-0.219
			74.168		93.303					
LIQ	1258.00	91.211	251.620	113.704	71.828	173.499	-244.710	-256.547	5.279	-0.219
	1300.00	91.211	254.615	118.208	75.659	177.330	-255.341	-255.151	13.997	-0.562
	1400.00	91.211	261.375	128.196	84.780	186.451	-281.145	-251.834	34.577	-1.290
	1500.00	91.211	267.668	137.287	93.901	195.572	-307.601	-248.525	54.919	-1.912
	1600.00	91.211	273.555	145.621	103.022	204.693	-334.665	-245.224	75.041	-2.450
	1700.00	91.211	279.084	153.311	112.143	213.814	-362.300	-241.928	94.957	-2.918
	1800.00	91.211	284.298	160.445	121.264	222.935	-390.472	-238.639	114.678	-3.328

References

Phase	H / S	C _p
SOL	Ku1	e
LIQ	Tk1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—]
SOL-1	298.15	116.870	150.624	150.624	-194.974	0.000	-239.883	-194.974	-178.156	31.212
	300.00	117.129	151.348	150.626	-194.758	0.216	-240.162	-194.987	-178.051	31.002
	400.00	127.139	186.567	155.360	-182.491	12.483	-257.118	-196.966	-171.955	22.455
	500.00	133.173	215.628	164.593	-169.457	25.517	-277.271	-197.231	-165.665	17.307
	600.00	137.641	240.319	175.208	-155.908	39.066	-300.099	-197.315	-159.342	13.872
	700.00	141.370	261.823	186.078	-141.953	53.021	-325.229	-219.350	-152.778	11.400
	800.00	144.705	280.921	196.762	-127.647	67.327	-352.383	-219.723	-143.238	9.352
	900.00	147.811	298.146	207.085	-113.019	81.955	-381.351	-219.775	-133.671	7.758
	1000.00	150.775	313.874	216.989	-98.089	96.885	-411.963	-219.524	-124.115	6.483
	1100.00	153.646	328.379	226.464	-82.867	112.107	-444.085	-218.982	-114.598	5.442
	1153.00	155.140	335.644	231.317	-74.685	120.289	-461.683	-218.579	-109.578	4.964
SOL-2			0.000		0.000					
	1153.00	155.140	335.644	231.317	-74.685	120.289	-461.683	-218.579	-109.578	4.964
	1200.00	156.453	341.869	235.526	-67.362	127.612	-477.605	-690.700	-96.696	4.209
	1300.00	159.216	354.501	244.197	-51.578	143.396	-512.430	-684.868	-47.430	1.906
	1400.00	161.947	366.401	252.505	-35.520	159.454	-548.481	-678.770	1.376	-0.051
	1466.00	163.736	373.902	257.802	-24.772	170.202	-572.912	-674.602	33.344	-1.188
LIQ			111.307		163.176					
	1466.00	155.645	485.209	257.802	138.404	333.378	-572.912	-511.426	33.344	-1.188
	1500.00	155.645	488.777	262.997	143.696	338.670	-589.470	-509.524	45.957	-1.600
	1600.00	155.645	498.822	277.426	159.260	354.234	-638.855	-503.936	82.806	-2.703
	1700.00	155.645	508.258	290.730	174.825	369.799	-689.214	-498.355	119.307	-3.666
	1800.00	155.645	517.155	303.064	190.389	385.363	-740.489	-492.779	155.479	-4.512

References

Phase	H / S	C _p
SOL-1	Tk1/Ku1	e
SOL-2	u	e
LIQ	Tk1	e

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL-A	298.15	234.054	237.000	237.000	-2899.500	0.000	-2970.162	-2899.500	-2663.777	466.683
	300.00	234.340	238.449	237.004	-2899.067	0.433	-2970.601	-2899.513	-2662.314	463.550
	400.00	249.820	307.984	246.381	-2874.859	24.641	-2998.052	-2901.435	-2582.797	337.279
	500.00	265.300	365.393	264.598	-2849.103	50.397	-3031.799	-2901.215	-2503.146	261.502
	600.00	280.780	415.131	285.629	-2821.799	77.701	-3070.877	-2900.182	-2423.615	210.994
	700.00	296.260	459.576	307.357	-2792.947	106.553	-3114.650	-2920.338	-2344.089	174.918
	800.00	311.740	500.147	328.955	-2762.547	136.953	-3162.664	-2917.965	-2261.915	147.688
	900.00	327.220	537.758	350.090	-2730.599	168.901	-3214.581	-2914.318	-2180.114	126.531
	1000.00	342.700	573.035	370.638	-2697.103	202.397	-3270.138	-2909.349	-2098.790	109.630
	1100.00	358.180	606.424	390.568	-2662.059	237.441	-3329.125	-2903.021	-2018.029	95.828
	1200.00	373.660	638.253	409.892	-2625.467	274.033	-3391.371	-3367.848	-1929.458	83.987
	1215.00	375.982	642.910	412.740	-2619.844	279.656	-3400.980	-3365.860	-1911.491	82.178
SOL-B			15.638		19.000					
	1215.00	377.000	658.547	412.740	-2600.844	298.656	-3400.980	-3346.860	-1911.491	82.178
	1300.00	377.000	684.040	429.655	-2568.799	330.701	-3458.052	-3335.465	-1811.464	72.786
	1333.00	377.000	693.491	436.070	-2556.358	343.142	-3480.782	-3331.067	-1772.833	69.470

References

Phase	H / S	C _p	Remarks
SOL-A	e	e	
SOL-B	e	e	Tk1 MPT= 1333.

97.456

ZINC SULFIDE (WURTZITE)

ZnS

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _i [-]
SOL-W	298.15	45.882	67.990	67.990	-191.836	0.000	-212.107	-191.836	-190.137	33.311
	300.00	45.951	68.274	67.991	-191.751	0.085	-212.233	-191.840	-190.127	33.104
	400.00	48.509	81.887	69.830	-187.013	4.823	-219.768	-194.264	-189.436	24.738
	500.00	49.932	92.877	73.376	-182.085	9.751	-228.524	-195.917	-188.060	19.646
	600.00	50.907	102.071	77.413	-177.041	14.795	-238.284	-197.238	-186.356	16.224
	700.00	51.671	109.978	81.513	-171.911	19.925	-248.895	-205.659	-184.378	13.758
	800.00	52.323	116.921	85.514	-166.711	25.125	-260.247	-206.956	-181.251	11.834
	900.00	52.909	123.118	89.354	-161.448	30.388	-272.255	-261.039	-176.806	10.262
	1000.00	53.455	128.721	93.015	-156.130	35.706	-284.851	-260.694	-167.465	8.747
	1100.00	53.974	133.840	96.497	-150.758	41.078	-297.983	-260.302	-158.161	7.510
	1200.00	54.475	138.558	99.808	-145.336	46.500	-311.606	-375.000	-146.805	6.390
	1300.00	54.963	142.938	102.959	-139.864	51.972	-325.683	-373.461	-127.850	5.137
	1400.00	55.442	147.029	105.963	-134.344	57.492	-340.184	-371.878	-109.016	4.067
	1500.00	55.914	150.870	108.830	-128.776	63.060	-355.081	-370.253	-90.297	3.144
	1600.00	56.381	154.493	111.572	-123.161	68.675	-370.350	-368.585	-71.688	2.340
	1700.00	56.844	157.925	114.198	-117.500	74.336	-385.973	-366.875	-53.184	1.634
	1800.00	57.304	161.188	116.719	-111.792	80.044	-401.930	-365.122	-34.782	1.009
	1900.00	57.761	164.298	119.142	-106.039	85.797	-418.205	-363.328	-16.478	0.453
	1995.00	58.193	167.127	121.360	-100.531	91.305	-433.949	-361.586	0.822	-0.022
			5.453		10.878					
LIQ	1995.00	60.668	172.579	121.360	-89.653	102.183	-433.949	-350.708	0.822	-0.022
	2000.00	60.668	172.731	121.488	-89.350	102.486	-434.812	-350.602	1.703	-0.044
	2100.00	60.668	175.691	123.999	-83.283	108.553	-452.235	-348.503	19.266	-0.479
	2200.00	60.668	178.513	126.414	-77.216	114.620	-469.946	-346.407	36.730	-0.872
	2300.00	60.668	181.210	128.738	-71.149	120.687	-487.933	-344.314	54.098	-1.229
	2400.00	60.668	183.792	130.978	-65.083	126.753	-506.184	-342.225	71.376	-1.553
	2500.00	60.668	186.269	133.141	-59.016	132.820	-524.688	-340.140	88.566	-1.850

References

Phase	H / S	C _p	Remarks
SOL-W	Mi1	Mi1,e	e/H4 DPT= 1907. GAS (Zn + S2) / DPT= 1862.acc.vapor press.data
LIQ	e	Mi1,e	

ZnS[g]

ZINC SULFIDE (GAS)

97.456

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	35.154	247.802	247.802	202.087	0.000	128.205	202.087	150.174	-26.310
	300.00	35.181	248.020	247.803	202.152	0.065	127.746	202.063	149.852	-26.092
	400.00	36.115	258.288	249.196	205.724	3.637	102.408	198.472	132.741	-17.334
	500.00	36.552	266.399	251.854	209.359	7.272	76.160	195.528	116.624	-12.184
	600.00	36.792	273.086	254.852	213.028	10.941	49.176	192.831	101.104	-8.802
	700.00	36.940	278.770	257.873	216.715	14.628	21.576	182.967	86.093	-6.424
	800.00	37.038	283.709	260.801	220.414	18.327	-6.553	180.168	72.443	-4.730
	900.00	37.108	288.076	263.593	224.121	22.034	-35.147	124.531	60.302	-3.500
	1000.00	37.160	291.988	266.241	227.835	25.748	-64.154	123.271	53.233	-2.781
	1100.00	37.200	295.532	268.745	231.553	29.466	-93.532	122.009	46.290	-2.198
	1200.00	37.232	298.770	271.114	235.275	33.188	-123.250	5.610	41.551	-1.809
	1300.00	37.259	301.752	273.358	238.999	36.912	-153.278	5.402	44.555	-1.790
	1400.00	37.282	304.514	275.486	242.726	40.639	-183.593	5.192	47.574	-1.775
	1500.00	37.301	307.086	277.508	246.455	44.368	-214.174	4.978	50.609	-1.762
	1600.00	37.319	309.494	279.432	250.186	48.099	-245.005	4.763	53.658	-1.752
	1700.00	37.334	311.757	281.268	253.919	51.832	-276.068	4.544	56.721	-1.743
	1800.00	37.349	313.892	283.022	257.653	55.566	-307.352	4.323	59.796	-1.735
	1900.00	37.362	315.911	284.700	261.389	59.302	-338.843	4.099	62.884	-1.729
	2000.00	37.374	317.828	286.309	265.126	63.039	-370.531	3.873	65.984	-1.723

References

Phase	H / S	C _p
GAS	Mi1	Mi1

ZnS[S]

ZINC SULFIDE (SPHALERITE)

97.456

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-S	298.15	45.358	57.656	57.656	-205.183	0.000	-222.373	-205.183	-200.403	35.110
	300.00	45.435	57.936	57.656	-205.099	0.084	-222.480	-205.188	-200.374	34.888
	400.00	48.321	71.451	59.479	-200.394	4.789	-228.975	-207.646	-198.643	25.940
	500.00	49.940	82.421	63.005	-195.475	9.708	-236.686	-209.307	-196.221	20.499
	600.00	51.061	91.630	67.029	-190.423	14.760	-245.401	-210.619	-193.473	16.843
	700.00	51.945	99.570	71.124	-185.271	19.912	-254.970	-219.019	-190.453	14.212
	800.00	52.705	106.557	75.125	-180.038	25.145	-265.283	-220.283	-186.286	12.163
	900.00	53.391	112.805	78.970	-174.732	30.451	-276.256	-274.323	-180.808	10.494
	1000.00	54.032	118.463	82.641	-169.361	35.822	-287.824	-273.924	-170.438	8.903
	1100.00	54.644	123.642	86.136	-163.927	41.256	-299.933	-273.471	-160.111	7.603
	1200.00	55.235	128.422	89.464	-158.433	46.750	-312.539	-388.097	-147.738	6.431
	1293.00	55.772	132.565	92.416	-153.271	51.912	-324.677	-386.592	-129.167	5.218

References

Phase	H / S	C _p	Remarks
SOL-S	Mi1,e	Mi1	Mi1 TPT= 1293. (SPHALERITE - WURTZITE)

161.454

ZINC SULFATE

ZnSO4

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
SOL–2	298.15	99.062	110.499	110.499	–982.801	0.000	–1015.746	–982.801	–871.448	152.674
	300.00	99.203	111.113	110.501	–982.618	0.183	–1015.951	–982.815	–870.757	151.612
	400.00	106.818	140.694	114.483	–972.317	10.484	–1028.594	–985.619	–833.216	108.807
	500.00	114.432	165.348	122.254	–961.254	21.547	–1043.928	–987.254	–794.940	83.047
	600.00	122.047	186.885	131.266	–949.430	33.371	–1061.561	–988.115	–756.380	65.849
	700.00	129.662	206.270	140.618	–936.845	45.956	–1081.234	–995.590	–717.662	53.553
	800.00	137.277	224.081	149.952	–923.498	59.303	–1102.763	–995.415	–677.964	44.267
	900.00	144.892	240.690	159.121	–909.389	73.412	–1126.010	–1047.461	–637.168	36.980
	1000.00	152.507	256.350	168.068	–894.519	88.282	–1150.869	–1044.438	–591.733	30.909
	1015.00	153.649	258.629	169.390	–892.223	90.578	–1154.731	–1043.986	–584.945	30.103
SOL–1			20.075		20.376					
	1015.00	145.185	278.704	169.390	–871.847	110.954	–1154.731	–1023.610	–584.945	30.103
	1100.00	145.185	290.380	178.294	–859.506	123.295	–1178.924	–1021.474	–548.297	26.036
	1200.00	145.185	303.012	188.168	–844.988	137.813	–1208.603	–1134.174	–503.300	21.908
	1300.00	145.185	314.633	197.455	–830.469	152.332	–1239.493	–1130.754	–450.866	18.116
	1400.00	145.185	325.393	206.214	–815.951	166.850	–1271.501	–1127.400	–398.693	14.875
	1500.00	145.185	335.409	214.497	–801.433	181.368	–1304.547	–1124.106	–346.758	12.075

References

Phase	H / S	C _p
SOL–2	Nb1,Tk1	Tk1,e
SOL–1	Pa3	Pa3

179.469

ZINC SULFATE MONOHYDRATE

ZnSO4*H2O

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
SOL	298.15	153.559	145.515	145.515	–1301.517	0.000	–1344.902	–1301.517	–1131.059	198.157
	300.00	153.720	146.466	145.518	–1301.233	0.284	–1345.172	–1301.511	–1130.001	196.751
	400.00	162.423	191.880	151.652	–1285.426	16.091	–1362.178	–1303.200	–1072.811	140.095
	500.00	171.126	229.059	163.521	–1268.748	32.769	–1383.277	–1303.673	–1015.171	106.054
	600.00	179.828	261.028	177.167	–1251.200	50.317	–1407.817	–1303.318	–957.488	83.357
	700.00	188.531	289.402	191.210	–1232.783	68.734	–1435.364	–1309.526	–899.853	67.148
	800.00	197.234	315.145	205.116	–1213.494	88.023	–1465.610	–1308.031	–841.424	54.939

References

Phase	H / S	C _p
SOL	Tk1	Tk1,e

ZnSO4*2H2O

ZINC SULFATE DIHYDRATE

197.484

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	198.738	192.464	192.464	-1596.033	0.000	-1653.416	-1596.033	-1370.028	240.023
	300.00	198.928	193.694	192.468	-1595.665	0.368	-1653.773	-1596.024	-1368.626	238.299
	365.00	205.605	233.340	196.312	-1582.518	13.515	-1667.687	-1595.607	-1319.395	188.817

References

Phase	H / S	C _p	Remarks
SOL	Tk1	Tk1,e	Tk1 MPT= 365.

ZnSO4*6H2O

ZINC SULFATE HEXAHYDRATE

269.545

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	357.966	355.891	355.891	-2778.971	0.000	-2885.080	-2778.971	-2323.514	407.070
	300.00	358.226	358.106	355.898	-2778.309	0.662	-2885.740	-2778.990	-2320.688	404.068
	400.00	372.267	463.084	370.116	-2741.784	37.187	-2927.018	-2781.918	-2167.708	283.074
	500.00	386.309	547.662	397.430	-2703.855	75.116	-2977.686	-2783.400	-2013.991	210.400
	600.00	400.350	619.335	428.587	-2664.522	114.449	-3036.123	-2783.804	-1860.050	161.932
	700.00	414.392	682.104	460.410	-2623.785	155.186	-3101.258	-2790.519	-1706.051	127.307
	800.00	428.433	738.355	491.696	-2581.644	197.327	-3172.328	-2789.277	-1551.203	101.283

References

Phase	H / S	C _p	Remarks
SOL	Tk1	Tk1,e	Tk1 NDPT= 344. (LIQ + ZnSO4*H2O)

287.561

ZINC SULFATE HEPTAHYDRATE

ZnSO4*7H2O

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
SOL	298.15	379.151	388.694	388.694	–3078.537	0.000	–3194.426	–3078.537	–2563.315	449.082
	300.00	379.430	391.040	388.701	–3077.835	0.702	–3195.147	–3078.597	–2560.118	445.756
	400.00	394.543	502.265	403.764	–3039.137	39.400	–3240.043	–3083.743	–2386.744	311.677
	500.00	409.655	591.928	432.707	–2998.927	79.610	–3294.891	–3087.396	–2212.078	231.094
	600.00	424.768	667.953	465.734	–2957.206	121.331	–3357.977	–3089.921	–2036.756	177.315
	700.00	439.881	734.566	499.475	–2913.973	164.564	–3428.169	–3098.705	–1861.023	138.871
	800.00	454.993	794.290	532.656	–2869.229	209.308	–3504.662	–3099.482	–1684.149	109.964

References

Phase	H / S	C _p	Remarks
SOL	Tk1	Tk1,e	Tk1 NDPT= 321. (LIQ + ZnSO4*6H2O)

144.350

ZINC SELENIDE

ZnSe

Phase	T [K]	C _p [————— J / (K mol) —————]	S	–(G–H298)/T [—————]	H	H–H298	G	ΔH _f	ΔG _f	log K _f [–]
SOL	298.15	51.888	70.291	70.291	–158.992	0.000	–179.949	–158.992	–154.938	27.144
	300.00	51.898	70.612	70.292	–158.896	0.096	–180.080	–158.990	–154.913	26.973
	400.00	52.476	85.621	72.335	–153.677	5.315	–187.926	–159.020	–153.557	20.052
	500.00	53.053	97.393	76.211	–148.401	10.591	–197.097	–165.232	–152.077	15.887
	600.00	53.631	107.117	80.575	–143.067	15.925	–207.337	–166.202	–149.355	13.003
	700.00	54.208	115.427	84.974	–137.675	21.317	–218.474	–174.566	–146.389	10.924
	800.00	54.785	122.704	89.245	–132.225	26.767	–230.388	–175.769	–142.281	9.290
	900.00	55.363	129.190	93.329	–126.718	32.274	–242.988	–176.914	–138.026	8.011
	1000.00	55.940	135.053	97.213	–121.153	37.839	–256.205	–178.001	–133.646	6.981
	1100.00	56.517	140.411	100.900	–115.530	43.462	–269.982	–232.342	–124.207	5.898
	1200.00	57.095	145.354	104.401	–109.849	49.143	–284.274	–347.002	–112.307	4.889
	1300.00	57.672	149.947	107.730	–104.111	54.881	–299.041	–345.398	–92.814	3.729

References

Phase	H / S	C _p	Remarks
SOL	Mi1	Mi1	Mi1 MPT= 1799.

ZnSe[g]

ZINC SELENIDE (GAS)

144.350

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
GAS	298.15	36.175	249.936	249.936	237.233	0.000	162.715	237.233	187.726	-32.889
	300.00	36.190	250.160	249.937	237.300	0.067	162.252	237.206	187.419	-32.633
	400.00	36.714	260.654	251.364	240.949	3.716	136.687	235.606	171.057	-22.338
	500.00	36.958	268.876	254.074	244.634	7.401	110.196	227.803	155.217	-16.215
	600.00	37.091	275.627	257.120	248.337	11.104	82.961	225.202	140.942	-12.270
	700.00	37.172	281.351	260.183	252.050	14.817	55.105	215.159	127.189	-9.491
	800.00	37.225	286.318	263.146	255.770	18.537	26.716	212.227	114.822	-7.497
	900.00	37.262	290.705	265.969	259.495	22.262	-2.140	209.299	102.823	-5.968
	1000.00	37.289	294.632	268.643	263.223	25.990	-31.410	206.374	91.149	-4.761
	1100.00	37.309	298.187	271.170	266.953	29.720	-61.054	150.140	84.722	-4.023
	1200.00	37.325	301.434	273.558	270.684	33.451	-91.037	33.532	80.930	-3.523
	1300.00	37.338	304.423	275.819	274.417	37.184	-121.332	33.130	84.896	-3.411
	1400.00	37.348	307.190	277.962	278.152	40.919	-151.914	32.742	88.892	-3.317
	1500.00	37.357	309.767	279.998	281.887	44.654	-182.764	32.367	92.916	-3.236
	1600.00	37.365	312.178	281.934	285.623	48.390	-213.862	32.006	96.965	-3.166
	1700.00	37.371	314.444	283.781	289.360	52.127	-245.194	31.658	101.035	-3.104
	1800.00	37.377	316.580	285.544	293.097	55.864	-276.747	31.323	105.126	-3.051
	1900.00	37.382	318.601	287.231	296.835	59.602	-308.506	31.002	109.235	-3.003
	2000.00	37.386	320.518	288.848	300.574	63.341	-340.463	30.694	113.361	-2.961

References

Phase	H / S	C _p
GAS	Mi1	Mi1

ZnSeO3

ZINC SELENITE

192.348

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	93.661	98.324	98.324	-652.286	0.000	-681.601	-652.286	-564.843	98.958
	300.00	93.763	98.904	98.326	-652.113	0.173	-681.784	-652.288	-564.300	98.253
	400.00	99.286	126.634	102.069	-642.460	9.826	-693.114	-652.341	-534.960	69.859
	500.00	104.809	149.383	109.321	-632.255	20.031	-706.947	-658.213	-505.533	52.813
	600.00	110.332	168.980	117.667	-621.498	30.788	-722.886	-658.499	-474.965	41.349
	700.00	115.855	186.402	126.264	-610.189	42.097	-740.670	-665.828	-444.295	33.154
	800.00	121.378	202.233	134.785	-598.327	53.959	-760.114	-665.624	-412.656	26.944
	894.00	126.569	216.000	142.609	-586.674	65.612	-779.778	-665.023	-382.962	22.376
			51.949		46.442					
LIQ	894.00	140.164	267.949	142.609	-540.232	112.054	-779.778	-618.581	-382.962	22.376
	900.00	140.164	268.886	143.447	-539.391	112.895	-781.389	-618.448	-381.381	22.135
	1000.00	140.164	283.654	156.743	-525.374	126.912	-809.029	-616.277	-355.157	18.552

References

Phase	H / S	C _p
SOL	Tk1	e
LIQ	Tk1	e

192.990ZINC TELLURIDEZnTe										
Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f kJ / mol	ΔG _f kJ / mol	log K _f [–]
SOL	298.15	49.688	77.822	77.822	–119.244	0.000	–142.447	–119.244	–115.277	20.196
	300.00	49.723	78.130	77.823	–119.152	0.092	–142.591	–119.247	–115.252	20.067
	400.00	51.597	92.691	79.796	–114.086	5.158	–151.162	–119.447	–113.894	14.873
	500.00	53.472	104.406	83.583	–108.833	10.411	–161.036	–119.778	–112.471	11.750
	600.00	55.346	114.321	87.900	–103.392	15.852	–171.984	–120.253	–110.967	9.661
	700.00	57.220	122.993	92.306	–97.763	21.481	–183.858	–128.215	–109.294	8.156
	800.00	59.095	130.756	96.636	–91.948	27.296	–196.552	–146.728	–104.651	6.833
	900.00	60.969	137.825	100.825	–85.944	33.300	–209.987	–147.628	–99.335	5.765
	1000.00	62.844	144.345	104.855	–79.754	39.490	–224.099	–148.341	–93.929	4.906
	1100.00	64.718	150.423	108.724	–73.376	45.868	–238.841	–148.866	–88.461	4.201
	1200.00	66.593	156.134	112.440	–66.810	52.434	–254.172	–264.339	–80.864	3.520
	1300.00	68.467	161.539	116.010	–60.057	59.187	–270.058	–263.430	–65.610	2.636

References

Phase	H / S	C _p	Remarks
SOL	Mi1	Mi1	Mi1 MPT= 1570.

192.990ZINC TELLURIDE (GAS)ZnTe[g]										
Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f kJ / mol	ΔG _f kJ / mol	log K _f [–]
GAS	298.15	36.507	257.844	257.844	255.224	0.000	178.348	255.224	205.518	–36.006
	300.00	36.518	258.070	257.844	255.292	0.068	177.871	255.197	205.209	–35.730
	400.00	36.903	268.636	259.283	258.965	3.741	151.511	253.605	188.779	–24.652
	500.00	37.082	276.892	262.009	262.666	7.442	124.220	251.720	172.785	–18.051
	600.00	37.180	283.662	265.070	266.379	11.155	96.182	249.518	157.199	–13.685
	700.00	37.240	289.399	268.147	270.100	14.876	67.521	239.649	142.086	–10.603
	800.00	37.279	294.374	271.121	273.826	18.602	38.327	219.047	130.229	–8.503
	900.00	37.306	298.766	273.953	277.556	22.332	8.666	215.872	119.317	–6.925
	1000.00	37.326	302.698	276.635	281.287	26.063	–21.411	212.700	108.759	–5.681
	1100.00	37.341	306.256	279.168	285.021	29.797	–51.861	209.530	98.519	–4.678
	1200.00	37.353	309.506	281.563	288.755	33.531	–82.652	91.227	90.656	–3.946
	1300.00	37.362	312.496	283.829	292.491	37.267	–113.754	89.119	90.694	–3.644
	1400.00	37.370	315.265	285.977	296.228	41.004	–145.144	40.572	93.385	–3.484
	1500.00	37.376	317.844	288.016	299.965	44.741	–176.800	40.039	97.176	–3.384
	1600.00	37.382	320.256	289.957	303.703	48.479	–208.707	39.514	101.002	–3.297
	1700.00	37.386	322.522	291.806	307.441	52.217	–240.847	38.995	104.861	–3.222
	1800.00	37.391	324.660	293.573	311.180	55.956	–273.207	38.481	108.751	–3.156
	1900.00	37.394	326.681	295.263	314.920	59.696	–305.775	37.976	112.668	–3.097
	2000.00	37.398	328.599	296.882	318.659	63.435	–338.540	37.482	116.612	–3.046

References

Phase	H / S	C _p
GAS	Mi1	Mi1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	124.933	129.704	129.704	-1228.841	0.000	-1267.512	-1228.841	-1123.033	196.751
	300.00	125.129	130.477	129.706	-1228.610	0.231	-1267.753	-1228.810	-1122.377	195.423
	400.00	133.158	167.671	134.723	-1215.662	13.179	-1282.730	-1226.851	-1087.180	141.971
	500.00	138.674	198.004	144.438	-1202.058	26.783	-1301.060	-1224.558	-1052.524	109.956
	600.00	143.202	223.697	155.560	-1187.959	40.882	-1322.177	-1222.125	-1018.344	88.655
	700.00	147.263	246.081	166.927	-1173.433	55.408	-1345.690	-1226.951	-984.500	73.464
	800.00	151.074	265.996	178.088	-1158.515	70.326	-1371.311	-1224.489	-950.030	62.031
	900.00	154.741	284.003	188.872	-1143.223	85.618	-1398.825	-1221.835	-915.880	53.156
	1000.00	158.318	300.492	199.220	-1127.570	101.271	-1428.061	-1218.977	-882.036	46.073
	1100.00	161.837	315.747	209.129	-1111.561	117.280	-1458.883	-1215.904	-848.489	40.291
	1200.00	165.315	329.978	218.613	-1095.203	133.638	-1491.177	-1327.741	-813.142	35.395
	1300.00	168.765	343.346	227.699	-1078.499	150.342	-1524.849	-1323.151	-770.443	30.957
	1400.00	172.195	355.979	236.415	-1061.451	167.390	-1559.821	-1318.325	-728.107	27.166
	1500.00	175.610	367.976	244.789	-1044.061	184.780	-1596.024	-1313.258	-686.124	23.893
	1600.00	179.013	379.418	252.848	-1026.329	202.512	-1633.398	-1307.949	-644.487	21.040

References

Phase	H / S	C _p
SOL	Tk1	e

91.224

ZIRCONIUM

Zr

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—————]
SOL–A	298.15	25.202	38.869	38.869	0.000	0.000	–11.589	0.000	0.000	0.000
	300.00	25.218	39.025	38.869	0.047	0.047	–11.661	0.000	0.000	0.000
	400.00	25.935	46.383	39.868	2.606	2.606	–15.947	0.000	0.000	0.000
	500.00	26.564	52.238	41.776	5.231	5.231	–20.888	0.000	0.000	0.000
	600.00	27.281	57.142	43.939	7.922	7.922	–26.363	0.000	0.000	0.000
	700.00	28.053	61.404	46.136	10.688	10.688	–32.295	0.000	0.000	0.000
	800.00	28.966	65.208	48.286	13.537	13.537	–38.629	0.000	0.000	0.000
	900.00	30.003	68.678	50.362	16.485	16.485	–45.326	0.000	0.000	0.000
	1000.00	31.128	71.897	52.356	19.541	19.541	–52.356	0.000	0.000	0.000
	1100.00	32.306	74.919	54.271	22.712	22.712	–59.698	0.000	0.000	0.000
	1135.00	32.724	75.937	54.924	23.850	23.850	–62.338	0.000	0.000	0.000
SOL–B			3.539		4.017					
	1135.00	28.329	79.476	54.924	27.867	27.867	–62.338	0.000	0.000	0.000
	1200.00	28.511	81.059	56.297	29.714	29.714	–67.556	0.000	0.000	0.000
	1300.00	28.879	83.355	58.291	32.583	32.583	–75.778	0.000	0.000	0.000
	1400.00	29.353	85.512	60.159	35.494	35.494	–84.223	0.000	0.000	0.000
	1500.00	29.934	87.556	61.918	38.457	38.457	–92.877	0.000	0.000	0.000
	1600.00	30.621	89.509	63.582	41.484	41.484	–101.731	0.000	0.000	0.000
	1700.00	31.414	91.389	65.163	44.585	44.585	–110.776	0.000	0.000	0.000
	1800.00	32.314	93.209	66.670	47.770	47.770	–120.007	0.000	0.000	0.000
	1900.00	33.320	94.983	68.114	51.051	51.051	–129.417	0.000	0.000	0.000
	2000.00	34.433	96.720	69.501	54.438	54.438	–139.002	0.000	0.000	0.000
LIQ	2100.00	35.652	98.429	70.838	57.941	57.941	–148.760	0.000	0.000	0.000
	2125.00	35.973	98.853	71.165	58.837	58.837	–151.226	0.000	0.000	0.000
			9.845		20.920					
	2125.00	41.840	108.698	71.165	79.757	79.757	–151.226	0.000	0.000	0.000
	2200.00	41.840	110.149	72.469	82.895	82.895	–159.433	0.000	0.000	0.000
	2300.00	41.840	112.009	74.148	87.079	87.079	–170.541	0.000	0.000	0.000
	2400.00	41.840	113.789	75.763	91.263	91.263	–181.832	0.000	0.000	0.000
	2500.00	41.840	115.497	77.319	95.447	95.447	–193.297	0.000	0.000	0.000
	2600.00	41.840	117.138	78.819	99.631	99.631	–204.929	0.000	0.000	0.000
	2700.00	41.840	118.717	80.268	103.815	103.815	–216.722	0.000	0.000	0.000
	2800.00	41.840	120.239	81.668	107.999	107.999	–228.671	0.000	0.000	0.000
	2900.00	41.840	121.707	83.024	112.183	112.183	–240.768	0.000	0.000	0.000
	3000.00	41.840	123.126	84.337	116.367	116.367	–253.010	0.000	0.000	0.000
	3100.00	41.840	124.498	85.610	120.551	120.551	–265.392	0.000	0.000	0.000
	3200.00	41.840	125.826	86.846	124.735	124.735	–277.908	0.000	0.000	0.000
	3300.00	41.840	127.113	88.047	128.919	128.919	–290.556	0.000	0.000	0.000
	3400.00	41.840	128.363	89.215	133.103	133.103	–303.330	0.000	0.000	0.000
	3500.00	41.840	129.575	90.351	137.287	137.287	–316.227	0.000	0.000	0.000
	3600.00	41.840	130.754	91.457	141.471	141.471	–329.244	0.000	0.000	0.000
	3700.00	41.840	131.900	92.534	145.655	145.655	–342.377	0.000	0.000	0.000
	3800.00	41.840	133.016	93.585	149.839	149.839	–355.623	0.000	0.000	0.000
	3900.00	41.840	134.103	94.610	154.023	154.023	–368.979	0.000	0.000	0.000
	4000.00	41.840	135.162	95.611	158.207	158.207	–382.443	0.000	0.000	0.000

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		[-]
LIQ	4100.00	41.840	136.195	96.588	162.391	162.391	-396.011	0.000	0.000	0.000
	4200.00	41.840	137.204	97.543	166.575	166.575	-409.681	0.000	0.000	0.000
	4300.00	41.840	138.188	98.477	170.759	170.759	-423.451	0.000	0.000	0.000
	4400.00	41.840	139.150	99.390	174.943	174.943	-437.318	0.000	0.000	0.000
	4500.00	41.840	140.090	100.284	179.127	179.127	-451.280	0.000	0.000	0.000
	4600.00	41.840	141.010	101.160	183.311	183.311	-465.335	0.000	0.000	0.000
	4700.00	41.840	141.910	102.017	187.495	187.495	-479.481	0.000	0.000	0.000
	4702.63	41.840	141.933	102.040	187.605	187.605	-479.855	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks	
SOL-A	Ja2	Ja2		
SOL-B	Ja2	Ja2		
LIQ	Ja2	Ja2	Ja2	BPT= 4702.633, L= 561.294 kJ

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	24.775	183.027	183.027	610.027	0.000	555.458	610.027	567.046	-99.344
	300.00	24.798	183.180	183.027	610.073	0.046	555.119	610.026	566.780	-98.685
	400.00	25.271	190.410	184.009	612.587	2.560	536.423	609.981	552.370	-72.132
	500.00	24.923	196.019	185.873	615.100	5.073	517.091	609.869	537.979	-56.202
	600.00	24.431	200.518	187.951	617.567	7.540	497.256	609.645	523.620	-45.585
	700.00	24.105	204.257	190.021	619.992	9.965	477.012	609.304	509.307	-38.005
	800.00	24.054	207.469	192.006	622.398	12.371	456.422	608.860	495.051	-32.324
	900.00	24.280	210.313	193.885	624.812	14.785	435.531	608.327	480.856	-27.908
	1000.00	24.751	212.893	195.658	627.262	17.235	414.369	607.721	466.725	-24.379
	1100.00	25.396	215.281	197.335	629.768	19.741	392.959	607.056	452.657	-21.495
	1200.00	26.138	217.523	198.925	632.344	22.317	371.317	602.630	438.874	-19.104
	1300.00	26.913	219.645	200.438	634.997	24.970	349.458	602.414	425.236	-17.086
	1400.00	27.675	221.668	201.882	637.726	27.699	327.392	602.233	411.614	-15.358
	1500.00	28.392	223.602	203.266	640.530	30.503	305.127	602.073	398.004	-13.860
	1600.00	29.046	225.456	204.596	643.403	33.376	282.674	601.919	384.405	-12.550
	1700.00	29.629	227.234	205.875	646.337	36.310	260.039	601.752	370.815	-11.394
	1800.00	30.137	228.943	207.110	649.326	39.299	237.229	601.556	357.236	-10.367
	1900.00	30.574	230.584	208.302	652.362	42.335	214.252	601.311	343.669	-9.448
	2000.00	30.948	232.162	209.456	655.439	45.412	191.115	601.001	330.117	-8.622
	2100.00	31.269	233.680	210.574	658.550	48.523	167.822	600.609	316.582	-7.875
	2200.00	31.550	235.141	211.658	661.691	51.664	144.380	578.797	303.813	-7.213
	2300.00	31.807	236.549	212.709	664.859	54.832	120.795	577.781	291.337	-6.616
	2400.00	32.055	237.908	213.731	668.052	58.025	97.072	576.790	278.904	-6.070
	2500.00	32.314	239.222	214.725	671.271	61.244	73.215	575.824	266.512	-5.568
	2600.00	32.541	240.494	215.691	674.513	64.486	49.229	574.882	254.158	-5.106
	2700.00	32.782	241.726	216.633	677.779	67.752	25.118	573.964	241.840	-4.679
	2800.00	33.029	242.923	217.551	681.070	71.043	0.885	573.071	229.556	-4.282
	2900.00	33.284	244.086	218.446	684.385	74.358	-23.466	572.203	217.303	-3.914
	3000.00	33.547	245.219	219.319	687.727	77.700	-47.931	571.360	205.079	-3.571
	3100.00	33.819	246.324	220.173	691.095	81.068	-72.509	570.544	192.883	-3.250
	3200.00	34.098	247.402	221.007	694.491	84.464	-97.195	569.756	180.713	-2.950
	3300.00	34.383	248.455	221.823	697.915	87.888	-121.988	568.996	168.568	-2.668
	3400.00	34.673	249.486	222.621	701.368	91.341	-146.885	568.265	156.445	-2.403
	3500.00	34.965	250.495	223.403	704.849	94.822	-171.885	567.563	144.342	-2.154
	3600.00	35.258	251.485	224.170	708.361	98.334	-196.984	566.890	132.260	-1.919
	3700.00	35.550	252.455	224.921	711.901	101.874	-222.181	566.246	120.196	-1.697
	3800.00	35.840	253.406	225.658	715.470	105.443	-247.474	565.632	108.149	-1.487
	3900.00	36.125	254.341	226.382	719.069	109.042	-272.862	565.046	96.117	-1.287
	4000.00	36.404	255.259	227.092	722.695	112.668	-298.342	564.489	84.101	-1.098
	4100.00	36.676	256.162	227.790	726.349	116.322	-323.913	563.959	72.098	-0.919
	4200.00	36.939	257.049	228.476	730.030	120.003	-349.574	563.456	60.107	-0.748
	4300.00	37.192	257.921	229.151	733.737	123.710	-375.322	562.978	48.129	-0.585
	4400.00	37.434	258.779	229.815	737.468	127.441	-401.157	562.526	36.161	-0.429
	4500.00	37.663	259.622	230.468	741.223	131.196	-427.077	562.097	24.203	-0.281
	4600.00	37.878	260.453	231.110	745.000	134.973	-453.081	561.690	12.254	-0.139
	4700.00	38.079	261.269	231.743	748.798	138.771	-479.167	561.304	0.314	-0.003
	4800.00	38.264	262.073	232.367	752.616	142.589	-505.335	0.000	0.000	0.000

References

Phase	H / S	C _p
GAS	Ja2	Ja2

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [–]
SOL	298.15	48.369	35.941	35.941	–322.586	0.000	–333.302	–322.586	–318.236	55.754
	300.00	48.616	36.241	35.942	–322.496	0.090	–333.368	–322.585	–318.209	55.405
	400.00	57.619	51.626	37.978	–317.127	5.459	–337.777	–322.505	–316.764	41.365
	500.00	62.293	65.031	42.081	–311.111	11.475	–343.626	–322.574	–315.325	32.942
	600.00	65.262	76.668	46.897	–304.724	17.862	–350.724	–322.840	–313.854	27.323
	700.00	67.427	86.898	51.896	–298.085	24.501	–358.913	–323.276	–312.324	23.306
	800.00	69.162	96.018	56.851	–291.252	31.334	–368.067	–323.860	–310.721	20.288
	900.00	70.649	104.252	61.668	–284.260	38.326	–378.087	–324.580	–309.037	17.936
	1000.00	71.980	111.766	66.308	–277.128	45.458	–388.894	–325.428	–307.265	16.050
	1100.00	73.211	118.685	70.759	–269.868	52.718	–400.421	–326.399	–305.403	14.502
	1200.00	74.372	125.105	75.023	–262.488	60.098	–412.614	–331.199	–303.225	13.199
	1300.00	75.485	131.102	79.109	–254.995	67.591	–425.428	–331.858	–300.868	12.089
	1400.00	76.563	136.736	83.026	–247.392	75.194	–438.822	–332.545	–298.458	11.136
	1500.00	77.615	142.054	86.785	–239.683	82.903	–452.764	–333.267	–295.999	10.308
	1600.00	78.647	147.096	90.399	–231.870	90.716	–467.224	–334.033	–293.489	9.581
	1700.00	79.663	151.895	93.876	–223.954	98.632	–482.175	–334.851	–290.931	8.939
	1800.00	80.668	156.477	97.228	–215.938	106.648	–497.596	–335.729	–288.322	8.367
	1900.00	81.663	160.865	100.462	–207.821	114.765	–513.464	–336.676	–285.663	7.853
	2000.00	82.650	165.079	103.588	–199.605	122.981	–529.763	–337.703	–282.952	7.390
	2100.00	83.632	169.135	106.614	–191.291	131.295	–546.475	–338.817	–280.187	6.969
	2200.00	84.608	173.048	109.545	–182.879	139.707	–563.585	–361.353	–276.622	6.568
	2300.00	85.579	176.831	112.389	–174.370	148.216	–581.080	–363.089	–272.731	6.194
	2400.00	86.548	180.493	115.150	–165.763	156.823	–598.947	–465.314	–266.628	5.803
	2500.00	87.513	184.046	117.836	–157.060	165.526	–617.175	–467.145	–258.312	5.397
	2600.00	88.476	187.497	120.449	–148.261	174.325	–635.753	–468.879	–249.924	5.021
	2700.00	89.436	190.854	122.995	–139.365	183.221	–654.671	–470.517	–241.471	4.672
	2800.00	90.395	194.124	125.477	–130.374	192.212	–673.921	–472.060	–232.959	4.346
	2900.00	91.352	197.313	127.899	–121.286	201.300	–693.493	–473.507	–224.394	4.042
	3000.00	92.307	200.426	130.265	–112.103	210.483	–713.381	–474.858	–215.781	3.757
	3100.00	93.262	203.468	132.577	–102.825	219.761	–733.576	–476.113	–207.124	3.490
	3200.00	94.215	206.444	134.839	–93.451	229.135	–754.072	–477.273	–198.428	3.239
	3300.00	95.167	209.358	137.054	–83.982	238.604	–774.863	–478.338	–189.698	3.003
	3323.00	95.386	210.020	137.556	–81.791	240.795	–779.686	–478.570	–187.685	2.950
LIQ			31.478		104.600					
	3323.00	96.232	241.497	137.556	22.809	345.395	–779.686	–373.970	–187.685	2.950
	3400.00	96.232	243.702	139.935	30.219	352.805	–798.366	–373.970	–183.360	2.817
	3500.00	96.232	246.491	142.940	39.842	362.428	–822.877	–375.582	–177.720	2.652
	3600.00	96.232	249.202	145.854	49.466	372.052	–847.662	–376.493	–172.054	2.496
	3700.00	96.232	251.839	148.683	59.089	381.675	–872.715	–377.403	–166.363	2.349
	3800.00	96.232	254.405	151.432	68.712	391.298	–898.027	–378.314	–160.647	2.208

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	NDPT= 4466.

Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f kJ / mol	ΔG _f kJ / mol	log K _f [—]
GAS	298.15	36.058	265.375	265.375	301.248	0.000	222.126	301.248	256.406	–44.921
	300.00	36.085	265.598	265.376	301.315	0.067	221.635	301.198	256.128	–44.596
	400.00	36.753	276.095	266.802	304.965	3.717	194.527	285.048	244.383	–31.913
	500.00	37.092	284.332	269.514	308.657	7.409	166.491	284.269	234.305	–24.478
	600.00	37.517	291.130	272.566	312.386	11.138	137.708	283.448	224.389	–19.535
	700.00	38.028	296.951	275.644	316.163	14.915	108.297	282.592	214.613	–16.015
	800.00	38.585	302.065	278.633	319.994	18.746	78.342	281.698	204.963	–13.383
	900.00	39.158	306.643	281.495	323.881	22.633	47.902	280.759	195.426	–11.342
	1000.00	39.723	310.798	284.221	327.825	26.577	17.027	279.765	185.998	–9.716
	1100.00	40.267	314.610	286.813	331.825	30.577	–14.246	278.707	176.672	–8.389
	1200.00	40.780	318.136	289.278	335.877	34.629	–45.885	273.867	167.667	–7.298
	1300.00	41.256	321.419	291.625	339.979	38.731	–77.865	273.208	158.843	–6.382
	1400.00	41.689	324.492	293.864	344.127	42.879	–110.162	272.549	150.071	–5.599
	1500.00	42.077	327.382	296.004	348.316	47.068	–142.757	271.876	141.346	–4.922
	1600.00	42.417	330.109	298.051	352.541	51.293	–175.633	271.173	132.666	–4.331
	1700.00	42.707	332.689	300.013	356.797	55.549	–208.774	270.425	124.032	–3.811
	1800.00	42.948	335.137	301.897	361.080	59.832	–242.167	269.616	115.444	–3.350
	1900.00	43.137	337.465	303.708	365.385	64.137	–275.798	268.731	106.903	–2.939
	2000.00	43.274	339.681	305.452	369.706	68.458	–309.656	267.753	98.410	–2.570

References

Phase	H / S	C _p
GAS	Ja1	Ja1

ZrBr2

ZIRCONIUM DIBROMIDE

251.032

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [—————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
SOL	298.15	86.722	115.897	115.897	-404.618	0.000	-439.173	-404.618	-382.203	66.960
	300.00	86.743	116.433	115.898	-404.458	0.160	-439.388	-404.644	-382.063	66.523
	400.00	87.889	141.545	119.315	-395.726	8.892	-452.344	-432.954	-368.580	48.132
	500.00	89.035	161.280	125.803	-386.880	17.738	-467.520	-430.425	-352.779	36.855
	600.00	90.181	177.614	133.116	-377.919	26.699	-484.487	-427.873	-337.489	29.381
	700.00	91.328	191.602	140.495	-368.843	35.775	-502.965	-425.299	-322.628	24.075
	800.00	92.474	203.872	147.666	-359.653	44.965	-522.751	-422.706	-308.138	20.119
	900.00	93.620	214.830	154.530	-350.349	54.269	-543.695	-420.107	-293.973	17.062
LIQ			69.733		62.760					
	900.00	91.002	284.563	154.530	-287.589	117.029	-543.695	-357.347	-293.973	17.062
	1000.00	91.002	294.151	168.021	-278.488	126.130	-572.639	-355.068	-287.054	14.994
	1100.00	91.002	302.824	179.888	-269.388	135.230	-602.495	-352.912	-280.358	13.313
	1200.00	91.002	310.743	190.468	-260.288	144.330	-633.179	-354.593	-273.631	11.911
	1300.00	91.002	318.027	200.003	-251.188	153.430	-664.623	-352.148	-266.984	10.728
	1400.00	91.002	324.771	208.678	-242.088	162.530	-696.767	-349.750	-260.523	9.720
	1500.00	91.002	331.049	216.629	-232.987	171.631	-729.561	-347.410	-254.232	8.853
	1553.10	91.002	334.215	220.595	-228.155	176.463	-747.224	-346.195	-250.955	8.440

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 BPT= 1553.1, L= 131.84 kJ

251.032

ZIRCONIUM DIBROMIDE (GAS)

ZrBr2[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
GAS	298.15	60.689	316.838	316.838	–174.473	0.000	–268.938	–174.473	–211.968	37.136
	300.00	60.704	317.214	316.839	–174.361	0.112	–269.525	–174.547	–212.201	36.947
	400.00	61.384	334.778	319.229	–168.254	6.219	–302.165	–205.482	–218.401	28.520
	500.00	61.760	348.520	323.763	–162.094	12.379	–336.354	–205.640	–221.614	23.152
	600.00	61.944	359.799	328.857	–155.908	18.565	–371.787	–205.863	–224.789	19.570
	700.00	62.040	369.355	333.977	–149.708	24.765	–408.257	–206.164	–227.921	17.008
	800.00	62.105	377.644	338.929	–143.501	30.972	–445.616	–206.554	–231.003	15.083
	900.00	62.172	384.963	343.645	–137.287	37.186	–483.754	–207.045	–234.031	13.583
	1000.00	62.258	391.517	348.110	–131.066	43.407	–522.583	–207.646	–236.998	12.380
	1100.00	62.374	397.456	352.331	–124.835	49.638	–562.037	–208.359	–239.900	11.392
	1200.00	62.524	402.890	356.321	–118.590	55.883	–602.058	–212.896	–242.510	10.556
	1300.00	62.712	407.901	360.098	–112.329	62.144	–642.601	–213.288	–244.962	9.843
	1400.00	62.938	412.557	363.681	–106.047	68.426	–683.626	–213.708	–247.383	9.230
	1500.00	63.201	416.908	367.086	–99.740	74.733	–725.102	–214.162	–249.773	8.698
	1600.00	63.500	420.996	370.329	–93.405	81.068	–766.999	–214.657	–252.131	8.231
	1700.00	63.834	424.856	373.424	–87.039	87.434	–809.293	–215.199	–254.457	7.818
	1800.00	64.200	428.515	376.384	–80.637	93.836	–851.963	–215.796	–256.749	7.451
	1900.00	64.597	431.996	379.220	–74.198	100.275	–894.990	–216.455	–259.006	7.121
	2000.00	65.022	435.320	381.942	–67.717	106.756	–938.357	–217.185	–261.227	6.823

References

Phase	H / S	C _p
GAS	Ja1	Ja1

330.936

ZIRCONIUM TRIBROMIDE

ZrBr3

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	99.502	172.046	172.046	–635.968	0.000	–687.264	–635.968	–607.603	106.449
	300.00	99.582	172.662	172.048	–635.784	0.184	–687.582	–636.040	–607.427	105.762
	400.00	102.426	201.756	175.995	–625.664	10.304	–706.366	–680.203	–588.694	76.876
	500.00	103.798	224.774	183.530	–615.346	20.622	–727.733	–678.048	–566.066	59.136
	600.00	104.590	243.775	192.033	–604.923	31.045	–751.188	–675.894	–543.872	47.348
	700.00	105.109	259.939	200.608	–594.437	41.531	–776.394	–673.776	–522.036	38.955
	800.00	105.483	274.000	208.922	–583.906	52.062	–803.106	–671.717	–500.501	32.679
	900.00	105.771	286.441	216.858	–573.343	62.625	–831.140	–669.737	–479.219	27.813
	1000.00	106.007	297.598	224.383	–562.754	73.214	–860.351	–667.852	–458.152	23.931
	1100.00	106.209	307.711	231.506	–552.143	83.825	–890.625	–666.072	–437.269	20.764

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	NSPT= 1100.

ZrBr3[g]

ZIRCONIUM TRIBROMIDE (GAS)

330.936

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
[————— kJ / mol —————]										
GAS	298.15	79.431	371.607	371.607	-430.952	0.000	-541.747	-430.952	-462.086	80.956
	300.00	79.476	372.098	371.608	-430.805	0.147	-542.434	-431.062	-462.279	80.490
	400.00	81.055	395.211	374.749	-422.767	8.185	-580.852	-477.307	-463.180	60.485
	500.00	81.788	413.386	380.724	-414.621	16.331	-621.314	-477.323	-459.647	48.019
	600.00	82.189	428.336	387.450	-406.420	24.532	-663.422	-477.391	-456.106	39.708
	700.00	82.432	441.025	394.220	-398.188	32.764	-706.906	-477.528	-452.549	33.770
	800.00	82.592	452.044	400.774	-389.937	41.015	-751.572	-477.747	-448.966	29.314
	900.00	82.702	461.778	407.022	-381.672	49.280	-797.272	-478.066	-445.351	25.847
	1000.00	82.783	470.496	412.941	-373.397	57.555	-843.893	-478.496	-441.694	23.072
	1100.00	82.844	478.389	418.538	-365.116	65.836	-891.344	-479.045	-437.988	20.798
	1200.00	82.891	485.600	423.830	-356.829	74.123	-939.549	-483.430	-434.005	18.892
	1300.00	82.929	492.236	428.841	-348.538	82.414	-988.445	-483.686	-429.876	17.273
	1400.00	82.960	498.383	433.591	-340.243	90.709	-1037.979	-483.989	-425.726	15.884
	1500.00	82.986	504.108	438.103	-331.946	99.006	-1088.107	-484.351	-421.552	14.680
	1600.00	83.008	509.464	442.398	-323.646	107.306	-1138.789	-484.782	-417.352	13.625
	1700.00	83.027	514.497	446.492	-315.344	115.608	-1189.989	-485.293	-413.122	12.694
	1800.00	83.044	519.243	450.404	-307.041	123.911	-1241.678	-485.894	-408.860	11.865
	1900.00	83.059	523.733	454.146	-298.736	132.216	-1293.829	-486.597	-404.562	11.122
	2000.00	83.072	527.994	457.733	-290.429	140.523	-1346.418	-487.412	-400.223	10.453
	2100.00	83.084	532.048	461.176	-282.121	148.831	-1399.421	-488.349	-395.841	9.846
	2200.00	83.095	535.913	464.486	-273.813	157.139	-1452.821	-510.743	-390.666	9.276
	2300.00	83.105	539.607	467.672	-265.502	165.450	-1506.598	-512.374	-385.172	8.748
	2400.00	83.115	543.144	470.744	-257.191	173.761	-1560.737	-514.011	-379.606	8.262
	2500.00	83.124	546.537	473.708	-248.880	182.072	-1615.222	-515.654	-373.972	7.814

References

Phase	H / S	C _p
GAS	Ja1	Ja1

ZrBr4

ZIRCONIUM TETRABROMIDE

410.840

Phase	T [K]	C _p [————— J / (K mol) —————]	S	-(G-H298)/T [—————]	H	H-H298	G	ΔH _f	ΔG _f	log K _f [-]
[————— kJ / mol —————]										
SOL	298.15	124.804	224.681	224.681	-760.651	0.000	-827.640	-760.651	-725.288	127.067
	300.00	124.925	225.453	224.683	-760.420	0.231	-828.056	-760.747	-725.068	126.246
	400.00	129.283	262.071	229.646	-747.681	12.970	-852.509	-819.532	-700.929	91.532
	500.00	131.646	291.192	239.143	-734.626	26.025	-880.222	-816.486	-671.629	70.165
	600.00	133.333	315.350	249.888	-721.374	39.277	-910.584	-813.361	-642.950	55.974
	700.00	134.733	336.011	260.751	-707.969	52.682	-943.176	-810.192	-614.798	45.877
	720.00	134.994	339.810	262.894	-705.272	55.379	-949.935	-809.555	-609.225	44.198

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 NSPT= 628.5, MPT= 720.

410.840

ZIRCONIUM TETRABROMIDE (GAS)

ZrBr4[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [————— kJ / mol —————]	H–H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [–]
GAS	298.15	102.668	414.493	414.493	–644.754	0.000	–768.335	–644.754	–665.984	116.678
	300.00	102.729	415.128	414.495	–644.564	0.190	–769.102	–644.891	–666.115	115.981
	400.00	104.948	445.027	418.556	–634.166	10.588	–812.176	–706.016	–660.596	86.265
	500.00	106.035	468.575	426.289	–623.611	21.143	–857.898	–705.470	–649.305	67.832
	600.00	106.646	487.966	435.000	–612.974	31.780	–905.754	–704.961	–638.120	55.553
	700.00	107.021	504.436	443.772	–602.289	42.465	–955.395	–704.513	–627.017	46.789
	800.00	107.268	518.744	452.269	–591.574	53.180	–1006.569	–704.143	–615.972	40.219
	900.00	107.438	531.389	460.371	–580.838	63.916	–1059.088	–703.869	–604.968	35.111
	1000.00	107.560	542.715	468.049	–570.088	74.666	–1112.803	–703.706	–593.989	31.027
	1100.00	107.651	552.971	475.311	–559.327	85.427	–1167.596	–703.663	–583.020	27.685
	1200.00	107.720	562.341	482.178	–548.559	96.195	–1223.368	–707.455	–571.829	24.891
	1300.00	107.774	570.966	488.681	–537.784	106.970	–1280.039	–707.120	–560.540	22.523
	1400.00	107.816	578.954	494.847	–527.004	117.750	–1337.540	–706.834	–549.276	20.494
	1500.00	107.851	586.394	500.705	–516.221	128.533	–1395.812	–706.609	–538.030	18.736
	1600.00	107.879	593.355	506.280	–505.434	139.320	–1454.803	–706.454	–526.797	17.198
	1700.00	107.902	599.896	511.597	–494.645	150.109	–1514.469	–706.381	–515.571	15.842
	1800.00	107.922	606.064	516.675	–483.854	160.900	–1574.770	–706.401	–504.347	14.636
	1900.00	107.938	611.900	521.535	–473.061	171.693	–1635.670	–706.525	–493.119	13.557
	2000.00	107.953	617.436	526.193	–462.267	182.487	–1697.140	–706.764	–481.881	12.585

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [–]
SOL	298.15	37.904	33.321	33.321	–196.648	0.000	–206.583	–196.648	–193.282	33.862
	300.00	38.026	33.556	33.322	–196.578	0.070	–206.645	–196.640	–193.262	33.650
	400.00	43.580	45.309	34.887	–192.479	4.169	–210.603	–196.138	–192.207	25.100
	500.00	47.136	55.446	38.009	–187.930	8.718	–215.653	–195.544	–191.292	19.984
	600.00	49.414	64.256	41.666	–183.094	13.554	–221.648	–194.980	–190.496	16.584
	700.00	50.949	71.996	45.458	–178.071	18.577	–228.468	–194.501	–189.788	14.162
	800.00	52.042	78.874	49.213	–172.919	23.729	–236.018	–194.123	–189.141	12.350
	900.00	52.863	85.053	52.858	–167.672	28.976	–244.220	–193.856	–188.536	10.942
	1000.00	53.513	90.658	56.362	–162.352	34.296	–253.010	–193.711	–187.954	9.818
	1100.00	54.050	95.784	59.716	–156.973	39.675	–262.335	–193.693	–187.380	8.898
	1200.00	54.515	100.507	62.921	–151.544	45.104	–272.153	–197.512	–186.581	8.122
	1300.00	54.931	104.888	65.983	–146.072	50.576	–282.426	–197.199	–185.683	7.461
	1400.00	55.315	108.973	68.909	–140.559	56.089	–293.121	–196.926	–184.807	6.895
	1500.00	55.679	112.801	71.709	–135.009	61.639	–304.212	–196.700	–183.950	6.406
	1600.00	56.030	116.406	74.391	–129.424	67.224	–315.674	–196.525	–183.106	5.978
	1700.00	56.374	119.813	76.964	–123.804	72.844	–327.486	–196.409	–182.271	5.601
	1800.00	56.714	123.045	79.435	–118.149	78.499	–339.630	–196.361	–181.441	5.265
	1900.00	57.053	126.121	81.812	–112.461	84.187	–352.090	–196.388	–180.612	4.965
	2000.00	57.392	129.056	84.101	–106.739	89.909	–364.850	–196.500	–179.779	4.695
	2100.00	57.734	131.864	86.309	–100.982	95.666	–377.897	–196.706	–178.938	4.451
	2200.00	58.078	134.558	88.441	–95.192	101.456	–391.219	–218.339	–177.340	4.211
	2300.00	58.424	137.147	90.503	–89.367	107.281	–404.805	–219.177	–175.457	3.985
	2400.00	58.774	139.641	92.499	–83.507	113.141	–418.645	–219.989	–173.539	3.777
	2500.00	59.126	142.047	94.433	–77.612	119.036	–432.730	–220.773	–171.587	3.585
	2600.00	59.481	144.373	96.309	–71.682	124.966	–447.052	–221.531	–169.605	3.407
	2700.00	59.837	146.625	98.131	–65.716	130.932	–461.602	–222.259	–167.594	3.242
	2800.00	60.195	148.807	99.902	–59.714	136.934	–476.375	–222.959	–165.556	3.088
	2900.00	60.554	150.926	101.625	–53.677	142.971	–491.362	–223.630	–163.494	2.945
	3000.00	60.913	152.985	103.303	–47.603	149.045	–506.558	–224.272	–161.410	2.810
	3100.00	61.271	154.988	104.938	–41.494	155.154	–521.957	–224.885	–159.304	2.684
	3200.00	61.627	156.939	106.533	–35.349	161.299	–537.554	–225.468	–157.179	2.566
	3300.00	61.982	158.841	108.089	–29.169	167.479	–553.343	–226.022	–155.036	2.454
	3400.00	62.333	160.696	109.609	–22.953	173.695	–569.320	–226.547	–152.877	2.349
	3500.00	62.680	162.508	111.095	–16.702	179.946	–585.481	–227.044	–150.703	2.249
	3600.00	63.022	164.279	112.548	–10.417	186.231	–601.821	–227.512	–148.516	2.155
	3700.00	63.358	166.010	113.970	–4.098	192.550	–618.335	–227.954	–146.315	2.066
	3800.00	63.688	167.704	115.361	2.254	198.902	–635.021	–228.368	–144.103	1.981
	3805.00	63.704	167.788	115.430	2.573	199.221	–635.860	–228.388	–143.992	1.977
LIQ			20.893		79.496					
	3805.00	62.760	188.680	115.430	82.069	278.717	–635.860	–148.892	–143.992	1.977
	3900.00	62.760	190.228	117.233	88.031	284.679	–653.858	–149.365	–143.864	1.927
	4000.00	62.760	191.817	119.078	94.307	290.955	–672.961	–149.869	–143.717	1.877

References

Phase	H / S	C _p
SOL	Ja1	Ja1
LIQ	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [————— kJ / mol —————]	H–H298	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _r [–]
GAS	298.15	34.995	254.497	254.497	205.434	0.000	129.556	205.434	174.406	–30.555
	300.00	35.031	254.713	254.497	205.499	0.065	129.085	205.421	174.213	–30.333
	400.00	36.067	264.962	255.888	209.064	3.630	103.079	204.692	163.920	–21.406
	500.00	36.614	273.070	258.541	212.698	7.264	76.163	203.917	153.815	–16.069
	600.00	37.164	279.794	261.539	216.387	10.953	48.511	203.097	143.871	–12.525
	700.00	37.754	285.566	264.568	220.133	14.699	20.236	202.238	134.067	–10.004
	800.00	38.363	290.647	267.517	223.938	18.504	–8.580	201.342	124.389	–8.122
	900.00	38.971	295.201	270.344	227.805	22.371	–37.876	200.398	114.826	–6.664
	1000.00	39.561	299.338	273.040	231.732	26.298	–67.606	199.399	105.371	–5.504
	1100.00	40.123	303.135	275.606	235.716	30.282	–97.732	198.335	96.020	–4.560
	1200.00	40.649	306.649	278.048	239.755	34.321	–128.224	193.490	86.989	–3.787
	1300.00	41.133	309.922	280.375	243.845	38.411	–159.054	192.824	78.141	–3.140
	1400.00	41.573	312.987	282.596	247.980	42.546	–190.201	192.158	69.345	–2.587
	1500.00	41.965	315.869	284.719	252.158	46.724	–221.645	191.478	60.596	–2.110
	1600.00	42.308	318.588	286.752	256.372	50.938	–253.369	190.767	51.893	–1.694
	1700.00	42.601	321.162	288.701	260.618	55.184	–285.358	190.010	43.237	–1.328
	1800.00	42.843	323.604	290.573	264.890	59.456	–317.597	189.192	34.626	–1.005
	1900.00	43.032	325.926	292.373	269.184	63.750	–350.075	188.297	26.063	–0.717
	2000.00	43.170	328.137	294.106	273.495	68.061	–382.779	187.308	17.550	–0.458

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) ———]	S J / (K mol)	-(G-H298)/T [———]	H [————— kJ / mol —————]	H-H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [—]
SOL	298.15	72.610	110.039	110.039	-430.952	0.000	-463.760	-430.952	-385.649	67.564
	300.00	72.692	110.489	110.041	-430.818	0.134	-463.964	-430.927	-385.368	67.099
	400.00	76.016	131.899	112.937	-423.367	7.585	-476.127	-429.504	-370.393	48.368
	500.00	78.240	149.112	118.506	-415.649	15.303	-490.205	-427.981	-355.790	37.169
	600.00	80.040	163.540	124.842	-407.733	23.219	-505.857	-426.391	-341.500	29.730
	700.00	81.699	176.007	131.280	-399.644	31.308	-522.848	-424.744	-327.481	24.437
	800.00	83.142	187.011	137.572	-391.401	39.551	-541.010	-423.056	-313.701	20.483
	900.00	84.523	196.884	143.623	-383.017	47.935	-560.213	-421.346	-300.134	17.419
	1000.00	85.923	205.862	149.405	-374.495	56.457	-580.357	-419.621	-286.758	14.979
LIQ			26.778		26.778					
	1000.00	91.002	232.640	149.405	-347.717	83.235	-580.357	-392.843	-286.758	14.979
	1100.00	91.002	241.313	157.372	-338.617	92.335	-604.061	-390.668	-276.256	13.118
	1200.00	91.002	249.231	164.702	-329.517	101.435	-628.594	-392.334	-265.725	11.567
	1300.00	91.002	256.515	171.488	-320.417	110.535	-653.886	-389.875	-255.274	10.257
	1400.00	91.002	263.259	177.805	-311.316	119.636	-679.879	-387.467	-245.011	9.141
	1500.00	91.002	269.538	183.714	-302.216	128.736	-706.523	-385.119	-234.917	8.181
	1563.90	91.002	273.334	187.299	-296.401	134.551	-723.868	-383.655	-228.550	7.634

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 BPT= 1563.9, L= 188. kJ

162.129

ZIRCONIUM DICHLORIDE (GAS)

ZrCl2[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
GAS	298.15	57.679	292.571	292.571	–186.188	0.000	–273.418	–186.188	–195.307	34.217
	300.00	57.723	292.928	292.572	–186.081	0.107	–273.960	–186.191	–195.364	34.016
	400.00	59.523	309.805	294.861	–180.210	5.978	–304.132	–186.347	–198.398	25.908
	500.00	60.507	323.204	299.236	–174.204	11.984	–335.806	–186.536	–201.390	21.039
	600.00	61.050	334.288	304.181	–168.124	18.064	–368.696	–186.782	–204.339	17.789
	700.00	61.372	343.725	309.173	–162.001	24.187	–402.609	–187.102	–207.241	15.465
	800.00	61.589	351.935	314.016	–155.853	30.335	–437.401	–187.508	–210.092	13.718
	900.00	61.761	359.200	318.641	–149.685	36.503	–472.965	–188.014	–212.886	12.356
	1000.00	61.924	365.715	323.028	–143.501	42.687	–509.216	–188.627	–215.617	11.263
	1100.00	62.096	371.625	327.181	–137.300	48.888	–546.087	–189.351	–218.282	10.365
	1200.00	62.290	377.036	331.114	–131.081	55.107	–583.524	–193.898	–220.655	9.605
	1300.00	62.512	382.031	334.841	–124.841	61.347	–621.481	–194.300	–222.868	8.955
	1400.00	62.764	386.672	338.379	–118.577	67.611	–659.919	–194.728	–225.050	8.397
	1500.00	63.049	391.012	341.745	–112.287	73.901	–698.805	–195.190	–227.200	7.912
	1600.00	63.366	395.091	344.953	–105.966	80.222	–738.112	–195.692	–229.318	7.486
	1700.00	63.716	398.943	348.016	–99.613	86.575	–777.816	–196.242	–231.403	7.110
	1800.00	64.095	402.596	350.948	–93.222	92.966	–817.894	–196.848	–233.454	6.775
	1900.00	64.503	406.072	353.758	–86.793	99.395	–858.329	–197.516	–235.470	6.474
	2000.00	64.938	409.391	356.458	–80.321	105.867	–899.103	–198.256	–237.448	6.202

References

Phase	H / S	C _p
GAS	Ja1	Ja1

197.582

ZIRCONIUM TRICHLORIDE

ZrCl3

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
SOL	298.15	96.195	145.603	145.603	–714.209	0.000	–757.621	–714.209	–646.248	113.220
	300.00	96.307	146.199	145.605	–714.031	0.178	–757.891	–714.172	–645.827	112.448
	400.00	100.706	174.570	149.443	–704.159	10.050	–773.986	–712.060	–623.359	81.402
	500.00	103.467	197.356	156.822	–693.942	20.267	–792.620	–709.824	–601.441	62.832
	600.00	105.583	216.413	165.208	–683.486	30.723	–813.334	–707.512	–579.980	50.492
	700.00	107.393	232.828	173.723	–672.836	41.373	–835.815	–705.142	–558.911	41.706
	800.00	109.040	247.277	182.032	–662.013	52.196	–859.834	–702.727	–538.185	35.140
	900.00	110.592	260.210	190.012	–651.031	63.178	–885.220	–700.281	–517.764	30.050
	1000.00	112.086	271.940	197.627	–639.896	74.313	–911.836	–697.815	–497.617	25.993
	1045.90	112.758	276.985	201.000	–634.736	79.473	–924.435	–696.678	–488.453	24.394

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 NSPT= 1045.9

ZrCl3[g]

ZIRCONIUM TRICHLORIDE (GAS)

197.582

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	76.031	339.013	339.013	-524.255	0.000	-625.332	-524.255	-513.960	90.044
	300.00	76.101	339.484	339.015	-524.114	0.141	-625.959	-524.255	-513.896	89.477
	400.00	79.328	361.846	342.042	-516.333	7.922	-661.072	-524.235	-510.444	66.657
	500.00	81.577	379.804	347.857	-508.282	15.973	-698.183	-524.164	-507.004	52.966
	600.00	83.185	394.827	354.467	-500.039	24.216	-736.935	-524.065	-503.581	43.841
	700.00	84.375	407.744	361.177	-491.658	32.597	-777.079	-523.965	-500.175	37.324
	800.00	85.274	419.072	367.720	-483.174	41.081	-818.431	-523.888	-496.782	32.437
	900.00	85.955	429.157	373.997	-474.611	49.644	-860.852	-523.861	-493.396	28.636
	1000.00	86.469	438.241	379.974	-465.988	58.267	-904.229	-523.907	-490.010	25.595
	1100.00	86.849	446.501	385.652	-457.321	66.934	-948.473	-524.042	-486.614	23.107
	1200.00	87.121	454.070	391.043	-448.622	75.633	-993.507	-527.990	-482.980	21.024
	1300.00	87.305	461.052	396.163	-439.900	84.355	-1039.267	-527.797	-479.238	19.256
	1400.00	87.420	467.526	401.032	-431.163	93.092	-1085.700	-527.642	-475.508	17.741
	1500.00	87.480	473.560	405.668	-422.418	101.837	-1132.758	-527.543	-471.788	16.429
	1600.00	87.501	479.206	410.090	-413.669	110.586	-1180.399	-527.515	-468.073	15.281
	1700.00	87.496	484.511	414.313	-404.919	119.336	-1228.588	-527.570	-464.356	14.268
	1800.00	87.478	489.512	418.353	-396.170	128.085	-1277.291	-527.723	-460.634	13.367
	1900.00	87.459	494.241	422.224	-387.423	136.832	-1326.481	-527.983	-456.900	12.561
	2000.00	87.452	498.727	425.938	-378.678	145.577	-1376.131	-528.362	-453.150	11.835

References

Phase	H / S	C _p
GAS	Ja1	Ja1

ZrCl4

ZIRCONIUM TETRACHLORIDE

233.035

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	119.771	181.418	181.418	-979.809	0.000	-1033.899	-979.809	-889.266	155.796
	300.00	119.913	182.160	181.420	-979.587	0.222	-1034.235	-979.760	-888.704	154.737
	400.00	125.394	217.491	186.201	-967.293	12.516	-1054.289	-976.959	-858.768	112.144
	500.00	128.691	245.849	195.388	-954.578	25.231	-1077.503	-974.011	-829.560	86.664
	600.00	131.128	269.536	205.826	-941.582	38.227	-1103.304	-970.977	-800.953	69.729
	700.00	133.159	289.906	216.416	-928.366	51.443	-1131.300	-967.879	-772.860	57.672
	710.00	133.348	291.796	217.464	-927.033	52.776	-1134.209	-967.566	-770.076	56.654

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 NSPT= 609., MPT= 710., L= 50. kJ

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
GAS	298.15	98.230	367.716	367.716	-869.979	0.000	-979.613	-869.979	-834.980	146.285
	300.00	98.333	368.324	367.718	-869.797	0.182	-980.294	-869.969	-834.763	145.345
	400.00	102.202	397.210	371.630	-859.747	10.232	-1018.631	-869.413	-823.110	107.487
	500.00	104.185	420.250	379.128	-849.418	20.561	-1059.543	-868.850	-811.600	84.787
	600.00	105.324	439.355	387.619	-838.938	31.041	-1102.551	-868.332	-800.199	69.664
	700.00	106.034	455.648	396.202	-828.367	41.612	-1147.321	-867.881	-788.881	58.867
	800.00	106.505	469.839	404.539	-817.739	52.240	-1193.610	-867.512	-777.621	50.773
	900.00	106.831	482.404	412.506	-807.071	62.908	-1241.235	-867.244	-766.402	44.481
	1000.00	107.067	493.673	420.069	-796.375	73.604	-1290.048	-867.086	-755.207	39.448
	1100.00	107.242	503.886	427.232	-785.660	84.319	-1339.934	-867.049	-744.022	35.331
	1200.00	107.375	513.223	434.014	-774.928	95.051	-1390.796	-870.848	-732.613	31.890
	1300.00	107.479	521.822	440.442	-764.186	105.793	-1442.554	-870.520	-721.107	28.974
	1400.00	107.561	529.790	446.543	-753.433	116.546	-1495.139	-870.241	-709.625	26.476
	1500.00	107.628	537.213	452.343	-742.674	127.305	-1548.494	-870.022	-698.160	24.312
	1600.00	107.682	544.161	457.867	-731.908	138.071	-1602.566	-869.875	-686.708	22.419
	1700.00	107.728	550.691	463.137	-721.138	148.841	-1657.312	-869.812	-675.262	20.748
	1800.00	107.767	556.850	468.174	-710.363	159.616	-1712.692	-869.843	-663.818	19.263
	1900.00	107.800	562.677	472.996	-699.585	170.394	-1768.671	-869.981	-652.369	17.935
	2000.00	107.829	568.207	477.619	-688.803	181.176	-1825.218	-870.236	-640.910	16.739

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
GAS	298.15	33.427	242.781	242.781	82.843	0.000	10.458	82.843	52.278	-9.159
	300.00	33.464	242.988	242.782	82.905	0.062	10.008	82.829	52.089	-9.069
	400.00	34.993	252.844	244.115	86.335	3.492	-14.803	82.093	41.953	-5.478
	500.00	36.020	260.768	246.679	89.887	7.044	-40.497	81.339	32.004	-3.343
	600.00	36.866	267.412	249.596	93.533	10.690	-66.914	80.557	22.210	-1.934
	700.00	37.639	273.153	252.560	97.258	14.415	-93.949	79.742	12.550	-0.936
	800.00	38.385	278.228	255.458	101.060	18.217	-121.523	78.890	3.009	-0.196
	900.00	39.127	282.792	258.245	104.935	22.092	-149.578	77.994	-6.423	0.373
	1000.00	39.875	286.953	260.911	108.885	26.042	-178.068	77.048	-15.753	0.823
	1100.00	40.532	290.784	263.455	112.905	30.062	-206.957	76.044	-24.985	1.186
	1200.00	41.171	294.339	265.882	116.991	34.148	-236.216	71.263	-33.901	1.476
	1300.00	41.756	297.658	268.200	121.138	38.295	-265.817	70.668	-42.640	1.713
	1400.00	42.278	300.772	270.417	125.340	42.497	-295.740	70.078	-51.334	1.915
	1500.00	42.737	303.705	272.539	129.591	46.748	-325.966	69.478	-59.986	2.089
	1600.00	43.137	306.476	274.574	133.885	51.042	-356.476	68.850	-68.596	2.239
	1700.00	43.486	309.102	276.529	138.217	55.374	-387.256	68.180	-77.166	2.371
	1800.00	43.790	311.596	278.408	142.581	59.738	-418.292	67.452	-85.695	2.487
	1900.00	44.055	313.971	280.218	146.974	64.131	-449.571	66.653	-94.182	2.589
	2000.00	44.287	316.237	281.963	151.391	68.548	-481.083	65.767	-102.625	2.680
	2100.00	44.489	318.403	283.647	155.830	72.987	-512.815	64.782	-111.020	2.761
	2200.00	44.666	320.476	285.274	160.288	77.445	-544.760	42.361	-118.621	2.816
	2300.00	44.822	322.465	286.848	164.763	81.920	-576.908	40.722	-125.902	2.859
	2400.00	44.959	324.376	288.372	169.252	86.409	-609.250	39.093	-133.111	2.897
	2500.00	45.080	326.214	289.849	173.754	90.911	-641.781	37.474	-140.253	2.930
	2600.00	45.188	327.984	291.282	178.267	95.424	-674.491	35.862	-147.330	2.960
	2700.00	45.283	329.691	292.673	182.791	99.948	-707.375	34.256	-154.346	2.986
	2800.00	45.367	331.340	294.025	187.324	104.481	-740.427	32.655	-161.302	3.009
	2900.00	45.443	332.933	295.339	191.864	109.021	-773.641	31.059	-168.201	3.030
	3000.00	45.510	334.475	296.618	196.412	113.569	-807.012	29.466	-175.044	3.048

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [—————]
SOL	298.15	65.949	75.312	75.312	–962.320	0.000	–984.774	–962.320	–912.722	159.905
	300.00	66.024	75.720	75.313	–962.198	0.122	–984.914	–962.303	–912.414	158.865
	400.00	69.849	95.249	77.950	–955.401	6.919	–993.500	–961.278	–895.935	116.997
	500.00	73.228	111.206	83.052	–948.243	14.077	–1003.846	–960.109	–879.732	91.905
	600.00	76.162	124.823	88.906	–940.770	21.550	–1015.664	–958.799	–863.778	75.199
	700.00	78.651	136.756	94.907	–933.025	29.295	–1028.755	–957.371	–848.052	63.282
	800.00	80.663	147.393	100.815	–925.058	37.262	–1042.972	–955.859	–832.537	54.359
	900.00	82.440	156.998	106.532	–916.901	45.419	–1058.199	–954.297	–817.216	47.430
	1000.00	83.985	165.766	112.024	–908.577	53.743	–1074.344	–952.710	–802.069	41.896
	1100.00	85.296	173.834	117.281	–900.111	62.209	–1091.329	–951.122	–787.082	37.375
	1175.00	86.127	179.488	121.073	–893.682	68.638	–1104.581	–953.778	–775.799	34.488
LIQ			32.048		37.656					
	1175.00	100.416	211.536	121.073	–856.026	106.294	–1104.581	–916.122	–775.799	34.488
	1200.00	100.416	213.650	122.980	–853.516	108.804	–1109.896	–915.257	–772.822	33.640
	1300.00	100.416	221.687	130.268	–843.474	118.846	–1131.668	–911.830	–761.092	30.581
	1400.00	100.416	229.129	137.067	–833.433	128.887	–1154.213	–908.462	–749.623	27.969
	1500.00	100.416	236.057	143.438	–823.391	138.929	–1177.477	–905.161	–738.393	25.713
	1600.00	100.416	242.538	149.431	–813.349	148.971	–1201.410	–901.936	–727.381	23.747
	1700.00	100.416	248.625	155.089	–803.308	159.012	–1225.971	–898.797	–716.568	22.017
	1800.00	100.416	254.365	160.446	–793.266	169.054	–1251.123	–895.754	–705.937	20.486
	1900.00	100.416	259.794	165.534	–783.225	179.095	–1276.834	–892.816	–695.472	19.120
	2000.00	100.416	264.945	170.376	–773.183	189.137	–1303.073	–889.993	–685.159	17.895
	2100.00	100.416	269.844	174.997	–763.141	199.179	–1329.814	–887.297	–674.984	16.789
	2200.00	100.416	274.516	179.416	–753.100	209.220	–1357.034	–906.059	–664.189	15.770
	2300.00	100.416	278.979	183.648	–743.058	219.262	–1384.711	–904.061	–653.240	14.836
	2400.00	100.416	283.253	187.710	–733.017	229.303	–1412.824	–902.071	–642.377	13.981
	2500.00	100.416	287.352	191.614	–722.975	239.345	–1441.355	–900.089	–631.598	13.197
	2527.00	100.416	288.431	192.643	–720.264	242.056	–1449.129	–899.555	–628.701	12.996

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 BPT= 2527., L= 288.7 kJ

ZrF2[g]

ZIRCONIUM DIFLUORIDE (GAS)

129.221

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	48.656	283.366	283.366	-558.146	0.000	-642.632	-558.146	-570.580	99.963
	300.00	48.730	283.667	283.367	-558.056	0.090	-643.156	-558.161	-570.657	99.360
	400.00	52.016	298.173	285.322	-553.006	5.140	-672.275	-558.883	-574.710	75.049
	500.00	53.977	310.010	289.113	-547.697	10.449	-702.703	-559.563	-578.588	60.445
	600.00	55.147	319.964	293.448	-542.236	15.910	-734.215	-560.266	-582.328	50.696
	700.00	55.885	328.524	297.861	-536.682	21.464	-766.649	-561.028	-585.946	43.724
	800.00	56.389	336.021	302.172	-531.067	27.079	-799.884	-561.868	-589.449	38.487
	900.00	56.767	342.685	306.311	-525.409	32.737	-833.825	-562.805	-592.842	34.408
	1000.00	57.081	348.683	310.253	-519.716	38.430	-868.399	-563.849	-596.124	31.138
	1100.00	57.368	354.137	313.998	-513.993	44.153	-903.544	-565.004	-599.297	28.458
	1200.00	57.650	359.141	317.554	-508.243	49.903	-939.211	-569.984	-602.138	26.210
	1300.00	57.941	363.766	320.933	-502.463	55.683	-975.360	-570.819	-604.783	24.300
	1400.00	58.249	368.072	324.149	-496.654	61.492	-1011.954	-571.683	-607.364	22.661
	1500.00	58.579	372.101	327.212	-490.813	67.333	-1048.965	-572.583	-609.881	21.238
	1600.00	58.933	375.893	330.138	-484.937	73.209	-1086.366	-573.524	-612.337	19.991
	1700.00	59.313	379.477	332.936	-479.025	79.121	-1124.136	-574.514	-614.733	18.888
	1800.00	59.718	382.879	335.616	-473.074	85.072	-1162.256	-575.561	-617.069	17.907
	1900.00	60.147	386.119	338.190	-467.081	91.065	-1200.707	-576.672	-619.345	17.027
	2000.00	60.600	389.216	340.664	-461.043	97.103	-1239.475	-577.854	-621.561	16.234

References

Phase	H / S	C _p
GAS	Ja1	Ja1

ZrF3

ZIRCONIUM TRIFLUORIDE

148.219

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	83.684	87.864	87.864	-1401.640	0.000	-1427.837	-1401.640	-1325.553	232.231
	300.00	83.923	88.382	87.866	-1401.485	0.155	-1428.000	-1401.619	-1325.081	230.717
	400.00	92.660	113.882	91.283	-1392.600	9.040	-1438.153	-1400.114	-1299.780	169.734
	500.00	97.227	135.094	97.986	-1383.086	18.554	-1450.633	-1398.269	-1274.906	133.188
	600.00	100.152	153.095	105.709	-1373.208	28.432	-1465.065	-1396.292	-1250.417	108.859
	700.00	102.301	168.702	113.618	-1363.081	38.559	-1481.172	-1394.255	-1226.266	91.505
	800.00	104.038	182.479	121.381	-1352.762	48.878	-1498.745	-1392.195	-1202.407	78.509
	900.00	105.534	194.821	128.867	-1342.281	59.359	-1517.621	-1390.134	-1178.808	68.416
	1000.00	106.881	206.011	136.031	-1331.660	69.980	-1537.671	-1388.088	-1155.437	60.354
	1100.00	108.131	216.257	142.865	-1320.908	80.732	-1558.791	-1386.068	-1132.270	53.767
	1200.00	109.314	225.717	149.380	-1310.036	91.604	-1580.896	-1387.790	-1109.064	48.276
	1300.00	110.450	234.512	155.594	-1299.047	102.593	-1603.913	-1385.290	-1085.938	43.634
	1400.00	111.553	242.738	161.528	-1287.947	113.693	-1627.780	-1382.744	-1063.006	39.661
	1500.00	112.630	250.471	167.203	-1276.737	124.903	-1652.444	-1380.164	-1040.257	36.225

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja2 DEC. 4ZrF3 = 3ZrF4 + Zr at T NSPT= 1468.

Phase	T	C _p	S	-(G-H298)/T	H	H-H298	G	ΔH _f	ΔG _f	log K _f
	[K]	[————— J / (K mol) —————]			[————— kJ / mol —————]			[—————]		[-]
GAS	298.15	67.840	305.541	305.541	-1105.413	0.000	-1196.510	-1105.413	-1094.226	191.704
	300.00	67.962	305.961	305.543	-1105.287	0.126	-1197.076	-1105.421	-1094.157	190.510
	400.00	73.664	326.341	308.282	-1098.190	7.223	-1228.726	-1105.703	-1090.353	142.385
	500.00	77.553	343.224	313.631	-1090.616	14.797	-1262.228	-1105.799	-1086.501	113.506
	600.00	80.217	357.614	319.792	-1082.720	22.693	-1297.288	-1105.803	-1082.640	94.252
	700.00	82.111	370.130	326.108	-1074.598	30.815	-1333.689	-1105.773	-1078.782	80.500
	800.00	83.497	381.189	332.316	-1066.314	39.099	-1371.266	-1105.747	-1074.928	70.186
	900.00	84.528	391.086	338.306	-1057.910	47.503	-1409.888	-1105.763	-1071.076	62.164
	1000.00	85.300	400.034	344.038	-1049.417	55.996	-1449.451	-1105.846	-1067.218	55.746
	1100.00	85.875	408.192	349.505	-1040.857	64.556	-1489.869	-1106.017	-1063.347	50.494
	1200.00	86.298	415.684	354.712	-1032.247	73.166	-1531.068	-1110.002	-1059.235	46.107
	1300.00	86.600	422.604	359.672	-1023.601	81.812	-1572.986	-1109.844	-1055.011	42.391
	1400.00	86.809	429.030	364.399	-1014.930	90.483	-1615.572	-1109.728	-1050.798	39.206
	1500.00	86.947	435.024	368.910	-1006.242	99.171	-1658.778	-1109.669	-1046.591	36.446
	1600.00	87.030	440.638	373.219	-997.543	107.870	-1702.564	-1109.681	-1042.386	34.030
	1700.00	87.077	445.916	377.342	-988.837	116.576	-1746.894	-1109.779	-1038.178	31.899
	1800.00	87.103	450.894	381.291	-980.128	125.285	-1791.737	-1109.974	-1033.961	30.005
	1900.00	87.121	455.604	385.080	-971.417	133.996	-1837.064	-1110.278	-1029.730	28.309
	2000.00	87.146	460.073	388.719	-962.704	142.709	-1882.850	-1110.700	-1025.480	26.783

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL-A	298.15	103.426	104.700	104.700	-1911.251	0.000	-1942.467	-1911.251	-1809.952	317.096
	300.00	103.699	105.341	104.702	-1911.059	0.192	-1942.662	-1911.222	-1809.324	315.031
	400.00	113.925	136.746	108.915	-1900.118	11.133	-1954.817	-1909.268	-1775.635	231.874
	500.00	119.654	162.831	117.165	-1888.418	22.833	-1969.834	-1906.918	-1742.493	182.037
	600.00	123.614	185.015	126.671	-1876.245	35.006	-1987.254	-1904.382	-1709.844	148.855
	700.00	126.738	204.312	136.414	-1863.722	47.529	-2006.741	-1901.726	-1677.630	125.186
	723.00	127.385	208.420	138.640	-1860.800	50.451	-2011.487	-1901.101	-1670.277	120.673
			0.000		0.000					
SOL-B	723.00	127.385	208.420	138.640	-1860.800	50.451	-2011.487	-1901.101	-1670.277	120.673
	800.00	129.416	221.414	145.990	-1850.912	60.339	-2028.043	-1898.977	-1645.803	107.460
	900.00	131.836	236.799	155.239	-1837.848	73.403	-2050.966	-1896.156	-1614.325	93.693
	1000.00	134.095	250.807	164.106	-1824.550	86.701	-2075.357	-1893.275	-1583.164	82.696
	1100.00	136.248	263.689	172.581	-1811.032	100.219	-2101.090	-1890.341	-1552.295	73.712
	1200.00	138.330	275.634	180.677	-1797.303	113.948	-2128.064	-1891.070	-1521.473	66.228
	1205.00	138.433	276.209	181.072	-1796.611	114.640	-2129.443	-1890.895	-1519.933	65.886

References

Phase	H / S	C _p	Remarks
SOL-A	Ja1	Ja1	Ja1 TPT(A-B) = 723.
SOL-B	u	Ja1	Ja1 MPT= 1205., L= 64.22 kJ / NSPT= 1179.

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	87.392	319.349	319.349	-1673.600	0.000	-1768.814	-1673.600	-1636.298	286.673
	300.00	87.558	319.890	319.350	-1673.438	0.162	-1769.405	-1673.601	-1636.067	284.865
	400.00	94.568	346.126	322.880	-1664.302	9.298	-1802.752	-1673.451	-1623.570	212.016
	500.00	98.719	367.713	329.752	-1654.620	18.980	-1838.476	-1673.120	-1611.136	168.314
	600.00	101.274	385.955	337.639	-1644.610	28.990	-1876.183	-1672.748	-1598.774	139.186
	700.00	102.935	401.700	345.692	-1634.394	39.206	-1915.584	-1672.398	-1586.473	118.384
	800.00	104.067	415.524	353.574	-1624.041	49.559	-1956.460	-1672.106	-1574.219	102.786
	900.00	104.870	427.830	361.154	-1613.592	60.008	-1998.639	-1671.900	-1561.997	90.656
	1000.00	105.457	438.911	368.385	-1603.074	70.526	-2041.985	-1671.799	-1549.792	80.953
	1100.00	105.899	448.984	375.261	-1592.505	81.095	-2086.387	-1671.814	-1537.591	73.014
	1200.00	106.239	458.213	381.795	-1581.897	91.703	-2131.753	-1675.665	-1525.163	66.389
	1300.00	106.506	466.728	388.005	-1571.260	102.340	-2178.006	-1675.389	-1512.632	60.778
	1400.00	106.719	474.629	393.913	-1560.598	113.002	-2225.079	-1675.164	-1500.121	55.970
	1500.00	106.891	481.998	399.543	-1549.917	123.683	-2272.914	-1675.000	-1487.624	51.804
	1600.00	107.033	488.901	404.914	-1539.221	134.379	-2321.463	-1674.911	-1475.136	48.158
	1700.00	107.151	495.394	410.047	-1528.512	145.088	-2370.681	-1674.905	-1462.651	44.942
	1800.00	107.251	501.521	414.961	-1517.791	155.809	-2420.529	-1674.996	-1450.163	42.083
	1900.00	107.336	507.322	419.670	-1507.062	166.538	-2470.974	-1675.193	-1437.667	39.524
	2000.00	107.410	512.830	424.192	-1496.324	177.276	-2521.984	-1675.507	-1425.158	37.221

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— J / (K mol) —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	29.553	216.163	216.163	516.306	0.000	451.857	516.306	482.927	-84.607
	300.00	29.588	216.346	216.163	516.361	0.055	451.457	516.287	482.720	-84.049
	400.00	31.066	225.075	217.344	519.399	3.093	429.369	515.313	471.679	-61.595
	500.00	32.136	232.127	219.617	522.561	6.255	406.497	514.389	460.879	-48.148
	600.00	33.015	238.066	222.210	525.820	9.514	382.980	513.492	450.261	-39.199
	700.00	33.775	243.213	224.851	529.160	12.854	358.911	512.598	439.793	-32.818
	800.00	34.448	247.768	227.436	532.572	16.266	334.357	511.683	429.455	-28.041
	900.00	35.048	251.861	229.926	536.047	19.741	309.372	510.724	419.233	-24.332
	1000.00	35.583	255.582	232.309	539.579	23.273	283.997	509.698	409.122	-21.370
	1100.00	36.057	258.996	234.582	543.162	26.856	258.266	508.590	399.117	-18.952
	1200.00	36.474	262.151	236.749	546.789	30.483	232.207	503.676	389.439	-16.952
	1300.00	36.834	265.086	238.818	550.454	34.148	205.843	502.913	379.950	-15.267
	1400.00	37.139	267.827	240.793	554.153	37.847	179.196	502.119	370.521	-13.824
	1500.00	37.390	270.398	242.682	557.880	41.574	152.284	501.278	361.150	-12.576
	1600.00	37.586	272.818	244.490	561.630	45.324	125.122	500.375	351.837	-11.486
	1700.00	37.729	275.101	246.224	565.396	49.090	97.725	499.394	342.583	-10.526
	1800.00	37.819	277.260	247.889	569.174	52.868	70.106	498.319	333.389	-9.675
	1900.00	37.856	279.306	249.489	572.958	56.652	42.276	497.136	324.258	-8.914
	2000.00	37.840	281.248	251.029	576.743	60.437	14.248	495.829	315.193	-8.232
	2100.00	37.771	283.092	252.512	580.524	64.218	-13.970	494.384	306.196	-7.616
	2200.00	37.649	284.847	253.943	584.295	67.989	-42.368	471.463	298.017	-7.076
	2273.00	37.527	286.074	254.955	587.039	70.733	-63.207	469.873	292.288	-6.717

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [—————]	S J / (K mol)	–(G–H298)/T [—————]	H [—————]	H–H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [–]
GAS	298.15	36.910	275.709	275.710	591.199	0.000	508.996	591.199	537.899	–94.238
	300.00	36.921	275.938	275.710	591.267	0.068	508.486	591.170	537.568	–93.599
	400.00	37.342	286.624	277.164	594.983	3.784	480.333	581.507	520.223	–67.934
	500.00	37.586	294.985	279.922	598.730	7.531	451.238	558.533	507.138	–52.980
	600.00	37.760	301.853	283.022	602.498	11.299	421.386	557.734	496.933	–43.262
	700.00	37.901	307.685	286.139	606.281	15.082	390.901	556.870	486.867	–36.330
	800.00	38.025	312.754	289.156	610.077	18.878	359.874	555.930	476.929	–31.140
	900.00	38.138	317.239	292.032	613.885	22.686	328.370	554.901	467.115	–27.111
	1000.00	38.245	321.263	294.757	617.705	26.506	296.442	553.770	457.421	–23.893
	1100.00	38.348	324.913	297.336	621.534	30.335	264.130	552.531	447.845	–21.266
	1200.00	38.448	328.254	299.775	625.374	34.175	231.469	547.468	438.608	–19.092
	1300.00	38.546	331.336	302.086	629.224	38.025	198.488	546.546	429.574	–17.260
	1400.00	38.643	334.196	304.278	633.083	41.884	165.209	545.587	420.612	–15.693
	1500.00	38.739	336.865	306.363	636.953	45.754	131.655	544.583	411.719	–14.337
	1600.00	38.834	339.368	308.348	640.831	49.632	97.842	543.522	402.896	–13.153
	1700.00	38.928	341.725	310.243	644.719	53.520	63.786	542.393	394.141	–12.110
	1800.00	39.022	343.953	312.054	648.617	57.418	29.501	541.186	385.455	–11.186
	1900.00	39.115	346.065	313.789	652.524	61.325	–5.001	539.890	376.838	–10.360
	2000.00	39.208	348.074	315.454	656.440	65.241	–39.708	538.494	368.292	–9.619
	2100.00	39.301	349.989	317.053	660.365	69.166	–74.612	536.989	359.819	–8.950
	2200.00	39.393	351.820	318.592	664.300	73.101	–109.704	514.039	352.165	–8.361
	2273.00	39.461	353.107	319.680	667.178	75.979	–135.434	512.452	346.820	–7.970

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [-]
SOL	298.15	94.138	150.206	150.206	-259.408	0.000	-304.192	-259.408	-257.975	45.196
	300.00	94.156	150.788	150.207	-259.234	0.174	-304.470	-259.381	-257.966	44.916
	400.00	95.030	177.998	153.911	-249.773	9.635	-320.973	-274.119	-257.140	33.579
	500.00	95.832	199.290	160.934	-240.230	19.178	-339.875	-315.394	-248.963	26.009
	600.00	96.628	216.832	168.831	-230.607	28.801	-360.707	-312.213	-235.976	20.544
	700.00	97.439	231.788	176.783	-220.904	38.504	-383.156	-309.039	-223.521	16.679
LIQ			35.863		25.104					
	700.00	97.439	267.651	176.783	-195.800	63.608	-383.156	-283.935	-223.521	16.679
	800.00	106.166	281.232	188.997	-185.620	73.788	-410.605	-280.376	-215.124	14.046
	900.00	114.882	294.240	199.972	-174.567	84.841	-439.383	-276.052	-207.219	12.027
	1000.00	123.593	306.795	210.030	-162.643	96.765	-469.438	-270.971	-199.836	10.438
	1100.00	132.299	318.983	219.384	-149.849	109.559	-500.730	-265.143	-192.999	9.165
	1200.00	141.003	330.868	228.181	-136.184	123.224	-533.225	-262.281	-186.503	8.118
	1298.00	149.531	342.267	236.365	-121.947	137.461	-566.210	-254.587	-180.615	7.268

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 BPT= 1298., L= 113. kJ

345.033

ZIRCONIUM DIIODIDE (GAS)

ZrI2[g]

Phase	T [K]	C _p [————— J / (K mol)]	S J / (K mol)	–(G–H298)/T [—————]	H [————— kJ / mol]	H–H298 [————— kJ / mol]	G [————— kJ / mol]	ΔH _f [————— kJ / mol]	ΔG _f [————— kJ / mol]	log K _f [–]
GAS	298.15	57.243	344.871	344.871	–66.944	0.000	–169.767	–66.944	–123.551	21.646
	300.00	57.255	345.225	344.872	–66.838	0.106	–170.406	–66.986	–123.902	21.573
	400.00	57.666	361.761	347.124	–61.089	5.855	–205.794	–85.435	–141.961	18.538
	500.00	57.857	374.652	351.388	–55.312	11.632	–242.638	–130.476	–151.726	15.851
	600.00	57.961	385.210	356.171	–49.520	17.424	–280.647	–131.127	–155.916	13.574
	700.00	58.024	394.150	360.975	–43.721	23.223	–319.626	–131.856	–159.991	11.939
	800.00	58.066	401.901	365.617	–37.916	29.028	–359.437	–132.673	–163.956	10.705
	900.00	58.094	408.742	370.036	–32.108	34.836	–399.976	–133.593	–167.812	9.740
	1000.00	58.115	414.864	374.218	–26.298	40.646	–441.162	–134.626	–171.560	8.961
	1100.00	58.130	420.404	378.169	–20.485	46.459	–482.930	–135.779	–175.198	8.319
	1200.00	58.142	425.462	381.902	–14.672	52.272	–525.227	–140.769	–178.505	7.770
	1300.00	58.152	430.117	385.434	–8.857	58.087	–568.009	–141.631	–181.615	7.297
	1400.00	58.160	434.427	388.782	–3.041	63.903	–611.239	–142.540	–184.657	6.890
	1500.00	58.166	438.439	391.960	2.775	69.719	–654.884	–143.507	–187.632	6.534
	1600.00	58.171	442.193	394.984	8.592	75.536	–698.918	–144.543	–190.540	6.220
	1700.00	58.176	445.720	397.865	14.409	81.353	–743.315	–145.659	–193.381	5.942
	1800.00	58.180	449.046	400.617	20.227	87.171	–788.055	–146.864	–196.154	5.692
	1900.00	58.184	452.191	403.250	26.045	92.989	–833.118	–148.171	–198.857	5.467
	2000.00	58.187	455.176	405.772	31.864	98.808	–878.488	–149.589	–201.489	5.262

References

Phase	H / S	C _p
GAS	Ja1	Ja1

471.937

ZIRCONIUM TRIIODIDE

ZrI3

Phase	T [K]	C _p [————— J / (K mol)]	S J / (K mol)	–(G–H298)/T [—————]	H [————— kJ / mol]	H–H298 [————— kJ / mol]	G [————— kJ / mol]	ΔH _f [————— kJ / mol]	ΔG _f [————— kJ / mol]	log K _f [–]
SOL	298.15	103.887	204.598	204.598	–397.480	0.000	–458.481	–397.480	–394.950	69.194
	300.00	103.934	205.240	204.600	–397.288	0.192	–458.860	–397.486	–394.935	68.764
	400.00	105.577	235.399	208.700	–386.801	10.679	–480.960	–422.016	–393.184	51.345
	500.00	106.339	259.049	216.490	–376.201	21.279	–505.725	–486.331	–379.801	39.678
	600.00	106.754	278.477	225.250	–365.544	31.936	–532.630	–483.992	–358.716	31.229
	700.00	107.006	294.954	234.061	–354.855	42.625	–561.323	–481.713	–338.017	25.223
	800.00	107.171	309.254	242.586	–344.146	53.334	–591.549	–479.512	–317.641	20.740
	900.00	107.285	321.884	250.709	–333.422	64.058	–623.118	–477.407	–297.534	17.268
	970.00	107.345	329.922	256.139	–325.910	71.570	–645.935	–475.998	–283.598	15.272

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 NSPT= 970.

ZrI3[g]

ZIRCONIUM TRIIODIDE (GAS)

471.937

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
GAS	298.15	80.820	397.799	397.799	-221.752	0.000	-340.356	-221.752	-276.825	48.499
	300.00	80.849	398.299	397.800	-221.602	0.150	-341.092	-221.800	-277.167	48.259
	400.00	81.843	421.714	400.986	-213.461	8.291	-382.146	-248.676	-294.371	38.441
	500.00	82.305	440.032	407.030	-205.251	16.501	-425.267	-315.382	-299.343	31.272
	600.00	82.556	455.062	413.820	-197.007	24.745	-470.044	-315.455	-296.130	25.780
	700.00	82.709	467.801	420.645	-188.743	33.009	-516.203	-315.601	-292.898	21.856
	800.00	82.809	478.852	427.245	-180.467	41.285	-563.548	-315.833	-289.640	18.912
	900.00	82.878	488.610	433.532	-172.182	49.570	-611.931	-316.166	-286.347	16.619
	1000.00	82.928	497.344	439.484	-163.892	57.860	-661.236	-316.613	-283.011	14.783
	1100.00	82.965	505.250	445.109	-155.597	66.155	-711.372	-317.182	-279.624	13.278
	1200.00	82.994	512.470	450.426	-147.299	74.453	-762.263	-321.588	-275.959	12.012
	1300.00	83.017	519.114	455.458	-138.998	82.754	-813.847	-321.867	-272.145	10.935
	1400.00	83.036	525.267	460.227	-130.696	91.056	-866.070	-322.196	-268.309	10.011
	1500.00	83.052	530.997	464.756	-122.391	99.361	-918.886	-322.585	-264.446	9.209
	1600.00	83.065	536.357	469.066	-114.085	107.667	-972.257	-323.045	-260.556	8.506
	1700.00	83.076	541.393	473.173	-105.778	115.974	-1026.147	-323.587	-256.634	7.885
	1800.00	83.086	546.142	477.097	-97.470	124.282	-1080.526	-324.222	-252.678	7.333
	1900.00	83.094	550.635	480.850	-89.161	132.591	-1135.367	-324.960	-248.683	6.837
	2000.00	83.102	554.897	484.447	-80.851	140.901	-1190.645	-325.811	-244.647	6.390

References

Phase	H / S	C _p
GAS	Ja1	Ja1

ZrI4

ZIRCONIUM TETRAIODIDE

598.842

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	127.798	260.287	260.287	-488.691	0.000	-566.295	-488.691	-485.451	85.049
	300.00	127.877	261.077	260.289	-488.455	0.236	-566.778	-488.703	-485.431	84.521
	400.00	131.014	298.338	265.348	-475.495	13.196	-594.830	-521.580	-483.112	63.088
	500.00	133.019	327.801	274.994	-462.288	26.403	-626.188	-607.385	-465.252	48.605
	600.00	134.579	352.195	285.886	-448.906	39.785	-660.223	-604.196	-437.124	38.055
	700.00	135.928	373.044	296.884	-435.379	53.312	-696.510	-600.961	-409.534	30.560
	772.00	136.827	386.395	304.619	-425.560	63.131	-723.857	-598.614	-389.962	26.385

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 NSPT= 705.6, MPT= 772.

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298	G [————— kJ / mol —————]	ΔH _f	ΔG _f	log K _f [–]
GAS	298.15	104.576	446.542	446.542	–362.334	0.000	–495.471	–362.334	–414.626	72.641
	300.00	104.619	447.189	446.544	–362.140	0.194	–496.297	–362.389	–414.951	72.249
	400.00	106.113	477.522	450.670	–351.593	10.741	–542.602	–397.678	–430.883	56.268
	500.00	106.807	501.283	458.502	–340.943	21.391	–591.585	–486.041	–430.649	44.990
	600.00	107.185	520.793	467.306	–330.242	32.092	–642.718	–485.533	–419.620	36.531
	700.00	107.415	537.334	476.159	–319.511	42.823	–695.645	–485.093	–408.670	30.495
	800.00	107.565	551.688	484.722	–308.762	53.572	–750.112	–484.737	–397.778	25.972
	900.00	107.670	564.364	492.881	–298.000	64.334	–805.927	–484.484	–386.924	22.456
	1000.00	107.745	575.712	500.607	–287.229	75.105	–862.941	–484.344	–376.093	19.645
	1100.00	107.802	585.984	507.909	–276.451	85.883	–921.033	–484.327	–365.269	17.345
	1200.00	107.847	595.366	514.811	–265.669	96.665	–980.108	–488.149	–354.221	15.419
	1300.00	107.882	604.000	521.344	–254.882	107.452	–1040.082	–487.846	–343.072	13.785
	1400.00	107.911	611.996	527.537	–244.093	118.241	–1100.886	–487.595	–331.946	12.385
	1500.00	107.935	619.442	533.419	–233.300	129.034	–1162.463	–487.407	–320.835	11.172
	1600.00	107.955	626.408	539.015	–222.506	139.828	–1224.759	–487.291	–309.734	10.112
	1700.00	107.972	632.953	544.351	–211.709	150.625	–1287.730	–487.260	–298.638	9.176
	1800.00	107.988	639.125	549.446	–200.911	161.423	–1351.337	–487.323	–287.542	8.344
	1900.00	108.001	644.964	554.321	–190.112	172.222	–1415.544	–487.493	–276.439	7.600
	2000.00	108.013	650.504	558.993	–179.311	183.023	–1480.320	–487.778	–265.324	6.930

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	40.443	38.869	38.869	-365.263	0.000	-376.852	-365.263	-336.699	58.988
	300.00	40.555	39.120	38.870	-365.188	0.075	-376.924	-365.262	-336.522	58.594
	400.00	44.756	51.434	40.521	-360.898	4.365	-381.471	-364.989	-326.973	42.698
	500.00	47.078	61.691	43.759	-356.297	8.966	-387.142	-364.483	-317.525	33.172
	600.00	48.661	70.422	47.493	-351.506	13.757	-393.759	-363.875	-308.189	26.830
	700.00	49.894	78.018	51.323	-346.576	18.687	-401.189	-363.232	-298.959	22.309
	800.00	50.941	84.751	55.088	-341.533	23.730	-409.334	-362.593	-289.821	18.923
	900.00	51.880	90.806	58.726	-336.391	28.872	-418.117	-361.988	-280.761	16.295
	1000.00	52.752	96.317	62.214	-331.159	34.104	-427.477	-361.432	-271.767	14.196
	1100.00	53.580	101.384	65.548	-325.842	39.421	-437.365	-360.935	-262.825	12.481
	1200.00	54.378	106.081	68.732	-320.444	44.819	-447.741	-364.213	-253.704	11.043
	1300.00	55.154	110.464	71.775	-314.968	50.295	-458.571	-363.302	-244.531	9.825
	1400.00	55.916	114.579	74.687	-309.414	55.849	-469.825	-362.376	-235.430	8.784
	1500.00	56.666	118.463	77.477	-303.785	61.478	-481.479	-361.444	-226.395	7.884
	1600.00	57.408	122.144	80.155	-298.081	67.182	-493.511	-360.517	-217.422	7.098
	1700.00	58.143	125.646	82.729	-292.303	72.960	-505.902	-359.603	-208.506	6.407
	1800.00	58.873	128.990	85.207	-286.453	78.810	-518.635	-358.712	-199.644	5.794
	1900.00	59.598	132.193	87.596	-280.529	84.734	-531.695	-357.854	-190.830	5.246
	2000.00	60.321	135.268	89.903	-274.533	90.730	-545.069	-357.039	-182.061	4.755
	2100.00	61.040	138.229	92.134	-268.465	96.798	-558.745	-356.277	-173.331	4.311
	2200.00	61.758	141.085	94.295	-262.325	102.938	-572.712	-376.900	-163.890	3.891
	2300.00	62.473	143.846	96.390	-256.114	109.149	-586.959	-376.689	-154.213	3.502
	2400.00	63.187	146.520	98.423	-249.830	115.433	-601.478	-376.413	-144.545	3.146
	2500.00	63.900	149.114	100.399	-243.476	121.787	-616.260	-376.071	-134.891	2.818
	2600.00	64.612	151.634	102.321	-237.050	128.213	-631.298	-375.663	-125.252	2.516
	2700.00	65.322	154.086	104.193	-230.554	134.709	-646.585	-375.188	-115.629	2.237
	2800.00	66.032	156.474	106.018	-223.986	141.277	-662.113	-374.646	-106.026	1.978
	2900.00	66.741	158.803	107.798	-217.347	147.916	-677.877	-374.038	-96.443	1.737
	3000.00	67.450	161.078	109.536	-210.638	154.625	-693.872	-373.362	-86.882	1.513
	3100.00	68.158	163.301	111.235	-203.857	161.406	-710.091	-372.619	-77.344	1.303
	3200.00	68.865	165.476	112.896	-197.006	168.257	-726.531	-371.808	-67.832	1.107
	3225.00	69.042	166.013	113.306	-195.282	169.981	-730.674	-371.595	-65.458	1.060
LIQ			20.887		67.362					
	3225.00	58.576	186.900	113.306	-127.920	237.343	-730.674	-304.233	-65.458	1.060
	3300.00	58.576	188.247	114.994	-123.527	241.736	-744.742	-304.372	-59.904	0.948
	3400.00	58.576	189.996	117.174	-117.670	247.593	-763.655	-304.561	-52.493	0.806
	3500.00	58.576	191.694	119.279	-111.812	253.451	-782.740	-304.752	-45.076	0.673

References

Phase	H / S	C _p
SOL	Ja1	Ku1,Ja1
LIQ	Ja1	Ja1

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	–(G–H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H–H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [— —]
GAS	298.15	30.856	227.426	227.426	58.576	0.000	–9.231	58.576	32.940	–5.771
	300.00	30.873	227.617	227.427	58.633	0.057	–9.652	58.559	32.781	–5.708
	400.00	32.437	236.703	228.655	61.795	3.219	–32.886	57.676	24.323	–3.176
	500.00	33.766	244.091	231.026	65.109	6.533	–56.937	56.836	16.082	–1.680
	600.00	34.894	250.347	233.738	68.542	9.966	–81.667	55.998	8.010	–0.697
	700.00	36.157	255.818	236.509	72.092	13.516	–106.980	55.155	0.079	–0.006
	800.00	37.706	260.743	239.235	75.783	17.207	–132.812	54.328	–7.733	0.505
	900.00	39.550	265.288	241.880	79.643	21.067	–159.116	53.538	–15.442	0.896
	1000.00	41.620	269.561	244.437	83.700	25.124	–185.861	52.808	–23.067	1.205
	1100.00	43.800	273.630	246.907	87.971	29.395	–213.022	52.153	–30.622	1.454
	1200.00	45.946	277.534	249.298	92.459	33.883	–240.581	47.864	–37.899	1.650
	1300.00	47.866	281.288	251.615	97.151	38.575	–268.523	47.896	–45.047	1.810
	1400.00	49.515	284.898	253.864	102.023	43.447	–296.834	48.051	–52.201	1.948
	1500.00	50.797	288.360	256.049	107.042	48.466	–325.498	48.286	–59.370	2.067
	1600.00	51.704	291.669	258.173	112.170	53.594	–354.501	48.553	–66.556	2.173
	1700.00	52.267	294.822	260.237	117.371	58.795	–383.827	48.808	–73.758	2.266
	1800.00	52.532	297.819	262.242	122.613	64.037	–413.460	49.006	–80.974	2.350
	1900.00	52.552	300.660	264.190	127.869	69.293	–443.385	49.112	–88.198	2.425
	2000.00	52.376	303.352	266.082	133.117	74.541	–473.587	49.091	–95.425	2.492
	2100.00	52.054	305.900	267.918	138.340	79.764	–504.051	48.918	–102.647	2.553
	2200.00	51.631	308.312	269.699	143.525	84.949	–534.763	27.245	–109.112	2.591
	2300.00	51.146	310.597	271.428	148.664	90.088	–565.709	26.285	–115.289	2.618
	2400.00	50.639	312.763	273.106	153.753	95.177	–596.878	25.264	–121.422	2.643
	2500.00	50.143	314.820	274.734	158.792	100.216	–628.258	24.182	–127.512	2.664

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL-A	298.15	56.052	50.359	50.359	-1097.463	0.000	-1112.477	-1097.463	-1039.724	182.155
	300.00	56.261	50.706	50.360	-1097.359	0.104	-1112.571	-1097.460	-1039.366	180.970
	400.00	63.848	68.071	52.676	-1091.305	6.158	-1118.533	-1096.937	-1020.063	133.207
	500.00	67.764	82.778	57.266	-1084.707	12.756	-1126.096	-1096.022	-1000.946	104.568
	600.00	70.235	95.366	62.592	-1077.799	19.664	-1135.018	-1094.965	-982.029	85.493
	700.00	72.025	106.333	68.075	-1070.682	26.781	-1145.115	-1093.868	-963.293	71.882
	800.00	73.450	116.047	73.475	-1063.406	34.057	-1156.243	-1092.779	-944.714	61.683
	900.00	74.664	124.770	78.698	-1055.999	41.464	-1168.292	-1091.725	-926.269	53.759
	1000.00	75.747	132.693	83.708	-1048.477	48.986	-1181.171	-1090.721	-907.940	47.426
	1100.00	76.744	139.960	88.496	-1040.852	56.611	-1194.808	-1089.777	-889.708	42.249
	1200.00	77.683	146.678	93.068	-1033.131	64.332	-1209.144	-1092.606	-871.337	37.928
	1300.00	78.580	152.932	97.435	-1025.317	72.146	-1224.129	-1091.244	-852.953	34.272
	1400.00	79.448	158.787	101.610	-1017.415	80.048	-1239.718	-1089.866	-834.675	31.142
	1478.00	80.109	163.113	104.743	-1011.193	86.270	-1252.273	-1088.788	-820.487	28.997
SOL-B			4.020		5.941					
	1478.00	74.475	167.132	104.743	-1005.252	92.211	-1252.273	-1082.847	-820.487	28.997
	1500.00	74.475	168.233	105.666	-1003.613	93.850	-1255.962	-1082.669	-816.583	28.436
	1600.00	74.475	173.039	109.728	-996.166	101.297	-1273.028	-1081.915	-798.869	26.080
	1700.00	74.475	177.554	113.587	-988.718	108.745	-1290.560	-1081.260	-781.199	24.003
	1800.00	74.475	181.811	117.260	-981.271	116.192	-1308.530	-1080.714	-763.564	22.158
	1900.00	74.475	185.838	120.764	-973.823	123.640	-1326.915	-1080.287	-745.957	20.508
	2000.00	74.475	189.658	124.114	-966.376	131.087	-1345.691	-1079.989	-728.369	19.023
	2100.00	74.475	193.291	127.322	-958.928	138.535	-1364.840	-1079.830	-710.793	17.680
	2200.00	74.475	196.756	130.400	-951.481	145.982	-1384.344	-1101.144	-692.475	16.441
	2300.00	74.475	200.067	133.358	-944.033	153.430	-1404.186	-1101.711	-673.886	15.304
	2400.00	74.475	203.236	136.204	-936.585	160.878	-1424.352	-1102.301	-655.273	14.262
	2500.00	74.475	206.276	138.946	-929.138	168.325	-1444.829	-1102.912	-636.634	13.302
	2600.00	74.475	209.197	141.593	-921.690	175.773	-1465.604	-1103.545	-617.970	12.415
	2700.00	74.475	212.008	144.149	-914.243	183.220	-1486.665	-1104.198	-599.282	11.594
LIQ	2800.00	74.475	214.717	146.621	-906.795	190.668	-1508.002	-1104.873	-580.569	10.831
	2900.00	74.475	217.330	149.014	-899.348	198.115	-1529.605	-1105.567	-561.832	10.120
	2950.00	74.475	218.603	150.183	-895.624	201.839	-1540.503	-1105.921	-552.454	9.782
			29.501		87.027					
	2950.00	87.864	248.104	150.183	-808.597	288.866	-1540.503	-1018.894	-552.454	9.782
	3000.00	87.864	249.581	151.828	-804.204	293.259	-1552.946	-1018.584	-544.551	9.481
	3100.00	87.864	252.462	155.028	-795.418	302.045	-1578.049	-1017.977	-528.760	8.910
	3200.00	87.864	255.251	158.116	-786.631	310.832	-1603.435	-1017.388	-512.988	8.374
	3300.00	87.864	257.955	161.101	-777.845	319.618	-1629.096	-1016.817	-497.234	7.871

References

Phase	H / S	C _p	Remarks
SOL-A	Ja1	Ja1	
SOL-B	Ja1	Ja1	
LIQ	Ja1	Ja1	Ja1 BPT= 4544., L= 624.3 kJ

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _i [- -]
GAS	298.15	46.073	273.751	273.751	-286.186	0.000	-367.805	-286.186	-295.052	51.692
	300.00	46.133	274.037	273.752	-286.101	0.085	-368.312	-286.202	-295.107	51.383
	400.00	49.400	287.767	275.602	-281.320	4.866	-396.427	-286.952	-297.957	38.909
	500.00	51.804	299.066	279.198	-276.252	9.934	-425.785	-287.567	-300.635	31.407
	600.00	53.410	308.663	283.329	-270.986	15.200	-456.184	-288.152	-303.194	26.395
	700.00	54.502	316.983	287.556	-265.587	20.599	-487.475	-288.773	-305.653	22.808
	800.00	55.269	324.314	291.702	-260.096	26.090	-519.547	-289.469	-308.017	20.111
	900.00	55.825	330.857	295.695	-254.540	31.646	-552.312	-290.266	-310.289	18.009
	1000.00	56.240	336.762	299.512	-248.936	37.250	-585.698	-291.180	-312.466	16.322
	1100.00	56.557	342.137	303.146	-243.295	42.891	-619.646	-292.220	-314.546	14.937
	1200.00	56.805	347.070	306.604	-237.627	48.559	-654.110	-297.102	-316.303	13.768
	1300.00	57.001	351.624	309.894	-231.936	54.250	-689.048	-297.863	-317.873	12.772
	1400.00	57.160	355.855	313.027	-226.228	59.958	-724.424	-298.679	-319.382	11.916
	1500.00	57.290	359.803	316.016	-220.505	65.681	-760.209	-299.561	-320.830	11.172
	1600.00	57.397	363.504	318.869	-214.771	71.415	-796.377	-300.520	-322.217	10.519
	1700.00	57.487	366.986	321.598	-209.026	77.160	-832.903	-301.569	-323.542	9.941
	1800.00	57.563	370.274	324.212	-203.274	82.912	-869.767	-302.717	-324.801	9.425
	1900.00	57.628	373.388	326.719	-197.514	88.672	-906.952	-303.978	-325.994	8.962
	2000.00	57.683	376.346	329.127	-191.748	94.438	-944.440	-305.362	-327.118	8.543
	2100.00	57.731	379.161	331.443	-185.978	100.208	-982.216	-306.880	-328.169	8.163
	2200.00	57.773	381.848	333.674	-180.202	105.984	-1020.268	-329.866	-328.399	7.797
	2300.00	57.810	384.417	335.824	-174.423	111.763	-1058.582	-332.102	-328.282	7.456
	2400.00	57.842	386.878	337.901	-168.641	117.545	-1097.148	-334.356	-328.068	7.140
	2500.00	57.870	389.240	339.907	-162.855	123.331	-1135.954	-336.629	-327.759	6.848
	2600.00	57.895	391.510	341.849	-157.067	129.119	-1174.993	-338.921	-327.359	6.577
	2700.00	57.918	393.695	343.729	-151.276	134.910	-1214.254	-341.232	-326.871	6.324
	2800.00	57.938	395.802	345.551	-145.483	140.703	-1253.729	-343.561	-326.296	6.087
	2900.00	57.956	397.836	347.319	-139.688	146.498	-1293.411	-345.908	-325.638	5.865
	3000.00	57.972	399.801	349.036	-133.892	152.294	-1333.294	-348.272	-324.899	5.657
	3100.00	57.987	401.702	350.704	-128.094	158.092	-1373.369	-350.654	-324.081	5.461
	3200.00	58.000	403.543	352.327	-122.295	163.891	-1413.632	-353.052	-323.185	5.275
	3300.00	58.012	405.328	353.906	-116.494	169.692	-1454.076	-355.466	-322.215	5.100
	3400.00	58.023	407.060	355.444	-110.692	175.494	-1494.696	-357.896	-321.171	4.934
	3500.00	58.033	408.742	356.943	-104.890	181.296	-1535.487	-360.342	-320.055	4.777

References

Phase	H / S	C _p
GAS	Ja1	Ja1

Phase	T [K]	C _p [—————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 kJ / mol	G [—————]	ΔH _f [—————]	ΔG _f [—————]	log K _f [-]
SOL	298.15	98.740	84.027	84.027	-2023.801	0.000	-2048.854	-2023.801	-1909.325	334.506
	300.00	99.035	84.639	84.029	-2023.618	0.183	-2049.010	-2023.810	-1908.614	332.319
	400.00	114.637	115.333	88.108	-2012.911	10.890	-2059.044	-2023.727	-1870.196	244.223
	500.00	125.978	142.215	96.299	-2000.843	22.958	-2071.950	-2022.681	-1831.919	191.379
	600.00	133.616	165.903	105.966	-1987.839	35.962	-2087.381	-2021.064	-1793.912	156.174
	700.00	138.877	186.919	116.059	-1974.198	49.603	-2105.042	-2019.147	-1756.202	131.049
	800.00	142.613	205.721	126.112	-1960.114	63.687	-2124.691	-2017.094	-1718.777	112.225
	900.00	145.323	222.683	135.916	-1945.710	78.091	-2146.125	-2015.010	-1681.613	97.598
	1000.00	147.298	238.102	145.375	-1931.074	92.727	-2169.176	-2012.963	-1644.679	85.909
	1100.00	148.710	252.212	154.455	-1916.269	107.532	-2193.702	-2011.004	-1607.947	76.355
	1200.00	149.663	265.195	163.150	-1901.347	122.454	-2219.581	-2012.880	-1571.166	68.391
	1300.00	150.216	277.199	171.467	-1886.350	137.451	-2246.708	-2010.660	-1534.447	61.655
	1400.00	150.400	288.340	179.422	-1871.316	152.485	-2274.992	-2008.547	-1497.895	55.887
	1500.00	150.624	298.732	187.034	-1856.254	167.547	-2304.352	-2006.555	-1461.490	50.894
	1600.00	150.624	308.453	194.322	-1841.191	182.610	-2334.716	-2004.720	-1425.213	46.528
	1700.00	150.624	317.585	201.307	-1826.129	197.672	-2366.023	-2053.225	-1388.599	42.666
	1800.00	150.624	326.194	208.008	-1811.066	212.735	-2398.216	-2051.500	-1349.554	39.163
	1900.00	150.624	334.338	214.445	-1796.004	227.797	-2431.246	-2049.917	-1310.601	36.031
	2000.00	150.624	342.064	220.634	-1780.942	242.859	-2465.069	-2048.486	-1271.727	33.214

References

Phase	H / S	C _p	Remarks
SOL	Ja1	Ja1	Ja1 DPT= 1811. (ZrO2 + SiO2)

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	–(G–H298)/T [—————]	H [————— kJ / mol —————]	H–H298	G kJ / mol	ΔH _f	ΔG _f	log K _f [–]
GAS	298.15	33.996	246.965	246.965	309.616	0.000	235.983	309.616	257.130	–45.048
	300.00	34.007	247.176	246.966	309.679	0.063	235.526	309.590	256.804	–44.714
	400.00	34.603	257.041	248.307	313.109	3.493	210.293	305.880	239.518	–31.278
	500.00	35.198	264.826	250.859	316.599	6.983	184.187	302.843	223.256	–23.323
	600.00	35.793	271.296	253.741	320.149	10.533	157.372	300.125	207.601	–18.073
	700.00	36.389	276.858	256.655	323.758	14.142	129.957	297.659	192.376	–14.355
	800.00	36.984	281.756	259.493	327.427	17.811	102.022	295.118	177.507	–11.590
	900.00	36.783	286.085	262.211	331.102	21.486	73.626	239.640	164.119	–9.525
	1000.00	36.840	289.963	264.796	334.783	25.167	44.820	238.430	155.792	–8.138
	1100.00	36.897	293.477	267.246	338.470	28.854	15.645	237.103	147.592	–7.009
	1200.00	36.954	296.690	269.568	342.163	32.547	–13.865	231.945	139.739	–6.083
	1300.00	37.011	299.650	271.770	345.861	36.245	–43.684	230.921	132.096	–5.308
	1400.00	37.068	302.395	273.860	349.565	39.949	–73.788	229.855	124.534	–4.646
	1500.00	37.125	304.955	275.849	353.275	43.659	–104.157	228.737	117.050	–4.076
	1600.00	37.182	307.352	277.744	356.990	47.374	–134.774	227.557	109.642	–3.579
	1700.00	37.238	309.608	279.552	360.711	51.095	–165.623	226.305	102.310	–3.144
	1800.00	37.295	311.738	281.282	364.438	54.822	–196.691	224.970	95.054	–2.758
	1900.00	37.352	313.756	282.938	368.170	58.554	–227.967	223.540	87.875	–2.416
	2000.00	37.409	315.674	284.528	371.908	62.292	–259.439	222.007	80.774	–2.110

References

Phase	H / S	C _p
GAS	Mi1	Mi1

ZrS2

ZIRCONIUM DISULFIDE

155.356

Phase	T [K]	C _p [————— J / (K mol) —————]	S [————— J / (K mol) —————]	-(G-H298)/T [————— kJ / mol —————]	H [————— kJ / mol —————]	H-H298 [————— kJ / mol —————]	G [————— kJ / mol —————]	ΔH _f [————— kJ / mol —————]	ΔG _f [————— kJ / mol —————]	log K _f [-]
SOL	298.15	68.757	78.241	78.241	-577.392	0.000	-600.719	-577.392	-570.016	99.864
	300.00	68.785	78.666	78.242	-577.265	0.127	-600.865	-577.396	-569.970	99.241
	400.00	70.291	98.661	80.958	-570.311	7.081	-609.775	-582.164	-567.273	74.078
	500.00	71.797	114.508	86.137	-563.207	14.185	-620.460	-585.489	-563.210	58.838
	600.00	73.304	127.731	91.997	-555.951	21.441	-632.590	-588.076	-558.493	48.621
	700.00	74.810	139.144	97.935	-548.546	28.846	-645.946	-590.056	-553.403	41.295
	800.00	76.316	149.232	103.728	-540.989	36.403	-660.375	-592.069	-548.033	35.783
	900.00	77.822	158.307	109.297	-533.283	44.109	-675.759	-699.722	-540.097	31.346
	1000.00	79.329	166.585	114.618	-525.425	51.967	-692.010	-698.591	-522.422	27.289
	1100.00	80.835	174.216	119.693	-517.417	59.975	-709.055	-697.439	-504.860	23.974
	1200.00	82.341	181.314	124.536	-509.258	68.134	-726.835	-699.979	-487.183	21.207
	1300.00	83.847	187.965	129.162	-500.949	76.443	-745.303	-698.246	-469.520	18.866
	1400.00	85.354	194.233	133.588	-492.489	84.903	-764.415	-696.415	-451.993	16.864
	1500.00	86.860	200.174	137.831	-483.878	93.514	-784.138	-694.495	-434.601	15.134
	1600.00	88.366	205.827	141.905	-475.117	102.275	-804.441	-692.497	-417.340	13.625
	1700.00	89.872	211.230	145.826	-466.205	111.187	-825.295	-690.431	-400.205	12.297
	1800.00	91.379	216.409	149.604	-457.142	120.250	-846.679	-688.308	-383.194	11.120
	1823.00	91.725	217.572	150.454	-455.036	122.356	-851.670	-687.812	-379.299	10.868

References

Phase	H / S	C _p	Remarks
SOL	Mi1	e	Mi1 MPT= 1823.

0.00054858

ELECTRON (GAS)

e-[g]

Phase	T [K]	C _p [————— J / (K mol) —————]	S J / (K mol)	-(G-H298)/T [—————]	H [—————]	H-H298 [—————]	G kJ / mol	ΔH _f [—————]	ΔG _f [—————]	log K _f [—]
GAS	298.15	20.786	20.979	20.979	0.000	0.000	-6.255	0.000	0.000	0.000
	300.00	20.786	21.108	20.980	0.038	0.038	-6.294	0.000	0.000	0.000
	400.00	20.786	27.088	21.795	2.117	2.117	-8.718	0.000	0.000	0.000
	500.00	20.786	31.726	23.335	4.196	4.196	-11.667	0.000	0.000	0.000
	600.00	20.786	35.516	25.058	6.274	6.274	-15.035	0.000	0.000	0.000
	700.00	20.786	38.720	26.787	8.353	8.353	-18.751	0.000	0.000	0.000
	800.00	20.786	41.495	28.456	10.432	10.432	-22.765	0.000	0.000	0.000
	900.00	20.786	43.944	30.044	12.510	12.510	-27.039	0.000	0.000	0.000
	1000.00	20.786	46.134	31.545	14.589	14.589	-31.545	0.000	0.000	0.000
	1100.00	20.786	48.115	32.963	16.667	16.667	-36.259	0.000	0.000	0.000
	1200.00	20.786	49.923	34.302	18.746	18.746	-41.162	0.000	0.000	0.000
	1300.00	20.786	51.587	35.568	20.825	20.825	-46.239	0.000	0.000	0.000
	1400.00	20.786	53.128	36.768	22.903	22.903	-51.476	0.000	0.000	0.000
	1500.00	20.786	54.562	37.907	24.982	24.982	-56.861	0.000	0.000	0.000
	1600.00	20.786	55.903	38.990	27.060	27.060	-62.385	0.000	0.000	0.000
	1700.00	20.786	57.163	40.023	29.139	29.139	-68.039	0.000	0.000	0.000
	1800.00	20.786	58.351	41.008	31.218	31.218	-73.815	0.000	0.000	0.000
	1900.00	20.786	59.475	41.951	33.296	33.296	-79.707	0.000	0.000	0.000
	2000.00	20.786	60.542	42.854	35.375	35.375	-85.708	0.000	0.000	0.000
	2100.00	20.786	61.556	43.721	37.453	37.453	-91.813	0.000	0.000	0.000
	2200.00	20.786	62.523	44.554	39.532	39.532	-98.018	0.000	0.000	0.000
	2300.00	20.786	63.447	45.355	41.611	41.611	-104.317	0.000	0.000	0.000
	2400.00	20.786	64.331	46.127	43.689	43.689	-110.706	0.000	0.000	0.000
	2500.00	20.786	65.180	46.873	45.768	45.768	-117.182	0.000	0.000	0.000
	2600.00	20.786	65.995	47.593	47.847	47.847	-123.741	0.000	0.000	0.000
	2700.00	20.786	66.780	48.289	49.925	49.925	-130.380	0.000	0.000	0.000
	2800.00	20.786	67.535	48.963	52.004	52.004	-137.096	0.000	0.000	0.000
	2900.00	20.786	68.265	49.616	54.082	54.082	-143.886	0.000	0.000	0.000
	3000.00	20.786	68.970	50.249	56.161	56.161	-150.748	0.000	0.000	0.000

References

Phase	H / S	C _p	Remarks
GAS	Ja1	Ja1	Ja1 Ar= 0.00054858

REF 2
541.369 0212 BAR
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Ihsan Barin

Thermochemical Data of Pure Substances

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